Fisheries Local Action Strategy Projects in the US Virgin Islands:
Progress and Direction

FINAL Report

October 10, 2014

This document was prepared by **Lia A. Ortiz**, of MRAG Americas,
for the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service
(NMFS) and Coral Reef Conservation Program

Acknowledgements

Funding for this report was provided by the NOAA Coral Reef Conservation Program. The following individuals provided a thorough technical review: Jocelyn Karazsia (NOAA Fisheries Southeast Regional Office), and Marlon Hibbert (NOAA National Ocean Service). Additonally, Marlon Hibbert, provided an immense amount of input on project updates, next steps and recommendations.

Additional technical input was provided by: Kemit Amon-Lewis (The Nature Conservancy), Jeanne Browne (The Nature Conservancy), James Byrne (The Nature Conservancy), Mark Hardgrove (National Park Service), Alexandra Holecek (US Virgin Islands Department of Planning and Natural Resources Coastal Zone Management Division), Aaron Hutchins (The Nature Conservancy), JP Oriol (US Virgin Islands Department of Planning and Natural Resources Commissionaer), Paige Rothenberger (US Virgin Islands Department of Planning and Natural Resources Coastal Zone Management Division), Roy A. Pemberton Jr. (US Virgin Islands Department of Planning and Natural Resources Division of Fish and Wildlife), Tyler Smith (University of the Virgin Islands), Sharon Couldren (Coral Bay Community Council), Teri Pishko (Fish Bay Homeowners Association), Ron Hill (NMFS Southeast Fisheries Science Center), Bill Arnold (NOAA Fisheries Southeast Regional Office), Lisamarie Carrubba (NOAA Fisheries Caribbean Field Office) and Dana Wusinich-Mendez (NOAA National Ocean Service).

Table of Contents

List of Tables

List of Figures

List of Appendices:

Appendix A-Acronyms

Acronym	Phrase
ACL	Annual Catch Limit(s)
CCMA	Center for Coastal Monitoring and Assessment
CFMC	Caribbean Fishery Management Council
COE	Army Corp of Engineers
CRCA	Coral Reef Conservation Act
CRCP	Coral Reef Conservation Program
CRTF	Coral Reef Task Force
CZM	DPNR Coastal Zone Management
DEE	DPNR Division of Environmental Enforcement
DEP	DPNR Division of Environmental Protection
DFW	DPNR Division of Fish and Wildlife
DPNR	Department of Planning and Natural Resources
DSTF	Don't Stop Talking Fish (Initiative)
EEMP	East End Marine Park (St. Croix)
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAC	Fishery Advisory Committee
FALN	Focus Areas Local Navigators
FKNMS	Florida Keys National Marine Sanctuary
FLO	Fisheries Liaison Officer
FN	Federal Navigators
FY	Fiscal Year
HAPC	Habitat Area of Particular Concern
LAS	Local Action Strategy
LBSP	Land Based Sources of Pollution
MOES-VI	Marine Outreach and Education USVI Style
MPA(S)	Marine Protected Area(s)
MSA	Magnuson-Stevens Reauthorization Act
NCCOS	National Centers for Coastal Ocean Science
NCRMP	National Coral Reef Monitoring Program
NMFS	National Marine Fisheries Service or NOAA Fisheries
NOAA	National Oceanic and Atmospheric Association
NOS	National Ocean Service
NPS	National Park Service
NFWF	National Fish and Wildlife Foundation
PEO	Presidential Executive Order
PR SEA GRANT	Puerto Rico College Sea Grant Program
PSD	Priority Setting Document(s)

PSP	Priority Setting Process
SCCFA	St. Croix Commercial Fishermen's Association
SCUBA	Self-Contained Underwater Breathing Apparatus
SEA	St. Croix Environmental Association
SEFSC	Southeast Fisheries Science Center
SFD	Sustainable Fisheries Division
SOP	Standard Operating Procedure
STXEEMP	East End Marine Park (St. Croix)
STEER	St. Thomas East End Reserves
TCRMP	Territorial Coral Reef Monitoring Program
TEV	Total Economic Evaluation
TNC	The Nature Conservancy
USFWS	United States Fish and Wildlife Service
USVI	United States Virgin Islands
UVI	University of the Virgin Islands
VICRAG	Virgin Islands Coral Reef Advisory Group
VIMAS	Virgin Islands Marine Advisory Service
VIMPAN	Virgin Islands Marine Protected Area Network
VIRCD	Virgin Islands Resource Conservation & Development Council Inc.

EXECUTIVE SUMMARY

Coral reefs and fisheries resources are facing major devastation globally by myriad anthropogenic and natural factors, including land-based sources of pollution (LBSP), unsustainable fishing practices and climate change. Over the past decades, with global advancements in science and technology, fishing practices and methodologies have also advanced with pursuit of efficiency and cost-effectiveness for fishers. However, this has led to severe overfishing and reduction in fish stocks worldwide.

The United States Virgin Islands (USVI) coral reef ecosystems and the communities that are dependent upon them, are no strangers to this global "tragedy of the commons." As a result, like many other small fishing communities in the world, the USVI fishing community has experienced economic downturn in response to the current global recession. A recent economic evaluation of coral reefs in the USVI has found their dollar value to be approximately $200 million (van Beukering, et al., 2011). This total economic value (TEV) is constituted by the goods and services the USVI coral reef ecosystems provide to the ecology, culture and economy. Coral reef ecosystem goods and services measured by dollar value that contributed to the TEV included: (1) coral reef-associated tourism, (2) reef-associated fisheries, (3) amenity or reef-associated surplus value on real estate, (4) physical coastal protection, (5) reef-associated recreational and cultural values and (6) research and education value. Ultimately, sustainability and resilience of coral reef ecosystems and their goods and services in the USVI is directly related to the sustainability of USVI culture and economy. Thus, in the past decade, local and federal resource managers have been working together to address coral reef management and conservation issues, globally, regionally and locally in the USVI.

The purpose of this document is to summarize these efforts as they relate to fishing impacts and the progression of fisheries management local action strategies (LAS) in the US Virgin Islands. The projects were inventoried by LAS geographic area and implementation status (i.e. Not Initiated, In Progress, Completed) by means of an extensive literature review and input from stakeholders and managers. Unlike STXEEMP and STEER, both Coral and Fish Bay do not have finalized LAS strategies, including that for fishing, and so these focus areas were not included in this inventory. Ultimately, his document aims to determine project implementation status, provide a basis for project implementation status and to provide recommendations for moving projects forward in line with the USVI coral reef management capacity assessment, not to reprioritize projects.

As it stands, out of 43 Fisheries LAS projects for the STXEEMP, 16 have not been initiated (37%), 22 are in progress (51%) and 5 are completed (12%) (Table 3). For STEER, there were a total of 36 projects proposed out of which 23 projects have not been initiated (64%), 11 projects are in progress (31%) and 2 projects have been completed (5%) (Table 3). These numbers suggest that a very small number of projects in both STEEXMP and STEER have made it to completion. However, in STEER there are substantially more projects that have not been initiated versus those in progress and the exact opposite holds true for STXEEMP.

There are many confounding factors that play a role as to why the status of the Fisheries LAS projects for both STXEEMP and STEER are as they stand and the 2012 USVI coral reef management capacity assessment (aka Cap Assessment) shines an immense amount of light on the general reasons underlying the implementation status of LAS projects in general (Sustainametrix, 2012). In addition to the general limitations to USVI Fisheries LAS project implementation, there were also contributing factors stemming from the LAS development process itself.

The more general, major issues that have stuck out in this inventory mirror the issues identified through the cap assessment and can be considered the overarching management capacity gaps that may be contributing to success/lack of implementation for these projects. The challenges and limitations faced when attempting to coordinate and implement projects in the US Virgin Islands are many. The attempt here is to highlight the major issues which include but are not limited to the following: inconsistent leadership, lack of formal entity (agency or NGO) and political commitment, staff recruitment and retention, lack of funding and resources, lack of communication and formal and informal outreach and education opportunities for building awareness and increasing compliance amongst stakeholders. A more detailed description of issue capacity gap is iterated in the Cap Assessment developed by Sustainametrix (2012) and may be accessed at the following link: http://coralreef.noaa.gov/aboutcrcp/strategy/reprioritization/capacityassessments/resources/finalusvicapacityassessment.pdf.

It is clear that there are many obstacles that may hinder progress on USVI Fisheries LAS project implementation. The next most feasible step for driving USVI Fisheries LAS projects forward is to implement a formal roll out of the USVI capacity assessment which has not been done to date but is proposed for February of 2016. Furthermore, now is the time for laying out the goal plan for achieving LAS project success as the USVI Territory embarks on the journey into the Caribbean Challenge Initiative which was launched in 2008 with support from The Nature Conservancy, the CCI is an endeavor of unprecedented scale and scope. It is critical to stress the need for utilizing existing resources and data for creating the baseline for which to develop next steps; there is no need to reinvent the wheel in most cases when it comes to achieving project success.

1.0 INTRODUCTION

1.1 Background and Rationale

Coral reefs and fisheries resources are facing major devastation globally by myriad anthropogenic and natural factors, including land-based sources of pollution (LBSP), unsustainable fishing practices and climate change. Over the past decades, with global advancements in science and technology, fishing practices and methodologies have also advanced with pursuit of efficiency and cost-effectiveness for fishers. However, this has led to severe overfishing and reduction in fish stocks worldwide.

The United States Virgin Islands (USVI) coral reef ecosystems and the communities that are dependent upon them, are no strangers to this global "tragedy of the commons." As a result, like many other small fishing communities in the world, the USVI fishing community has experienced economic downturn in response to the current global recession. A recent economic evaluation of coral reefs in the USVI has found their dollar value to be approximately $200 million (van Beukering, et al., 2011). This total economic value (TEV) is constituted by the goods and services the USVI coral reef ecosystems provide to the ecology, culture and economy. Coral reef ecosystem goods and services measured by dollar value that contributed to the TEV included: (1) coral reef-associated tourism, (2) reef-associated fisheries, (3) amenity or reef-associated surplus value on real estate, (4) physical coastal protection, (5) reef-associated recreational and cultural values and (6) research and education value. Ultimately, sustainability and resilience of coral reef ecosystems and their goods and services in the USVI is directly related to the sustainability of USVI culture and economy. Thus, in the past decade, local and federal resource managers have been working together to address coral reef management and conservation issues, globally, regionally and locally in the USVI. The purpose of this document is to summarize these efforts as they relate to fishing impacts and the progression of fisheries management local action strategies (LAS) in the US Virgin Islands.

1.2 Local Action Strategies for Coral Reef Management in the US Virgin Islands

In response to notable detrimental changes in fisheries and coral reef ecosystems, the National Oceanic and Atmospheric Administration's (NOAA) Coral Reef Conservation Program (CRCP) was established in 2000 to help fulfill NOAA's responsibilities under the Coral Reef Conservation Act (CRCA) and Presidential Executive Order 13089 (PEO 13089) on Coral Reef Protection. The mission of the CRCP is to protect, conserve, and restore coral reef resources by maintaining healthy ecosystem function. The primary objective of the CRCP is to address strategic coral reef management needs in a targeted, cost-effective and efficient manner. The US Coral Reef Task Force was also established under PEO 13089. The Task Force is comprised of representatives from twelve federal agencies responsible for various aspects of coral reef conservation, seven states, commonwealths and territories and three freely associated states (Micronesia, Marshall Islands, and Palau). The states, commonwealths and territories include Florida, Hawaii, American Samoa, Commonwealth of the Northern Marianna Islands, Guam, Puerto Rico, and the U.S. Virgin Islands. To make the most of limited resources and to have the largest impact to reverse general declines in coral reef health, the CRCP has narrowed the focus of its U.S. domestic program and shifted allocation of CRCP resources to taking on-the-ground and in the-water action. The CRCP has been working over the past decade to establish priority goals, objectives and strategies for improving coral reef and fisheries management and conservation at the domestic jurisdictional level. In 2007, CRCP had undergone an external review which resulted in a Final Report that recommended CRCP consolidate and sharpen the goals from the original 13 described as part of the National Coral Reef Action Strategy. Furthermore, the review panel recommended that CRCP focus more attention and resources on addressing the impacts of unsustainable fishing on coral

reef ecosystems which prompted the creation of aRoadmap for the Future of the Coral Program in 2008. This document guided a reprioritization process, and ultimately, the development of the CRCP's National Goals and Objectives 2010-2015 document which features 20-year goals and 5-year objectives that are pinpointed around three priority threats: climate change impacts, fishing impacts, and impacts from land-based sources of pollution (LBSP). There are four goals and nineteen objectives aimed at addressing fishing impacts (see Appendix 1). The four goals under the Fishing Impacts threat are as follows:

> **Goal 1.** Increasing the abundance and average size of key coral reef fishery species to protect trophic structure and biodiversity and improve coral reef ecosystem condition.
>
> **Goal 2.** Support effective implementation and management of marine protected areas (MPAs) and ecological networks of MPAs that protect key ecosystem components and functions.
>
> **Goal 3.** Increase stakeholder engagement and capacity to improve local compliance with and enforcement of fisheries management regulations that further coral reef ecosystem conservation.
>
> **Goal 4.** Utilize locally relevant education and communication strategies to increase public and policy maker understanding of fishing impacts in coral reef ecosystems and support for effective management options.

In order to address their goals and objectives relevant to the three threat focus areas, CRCP has worked very closely with the US CRTF, local resource managers and stakeholders in all seven jurisdictions that NOAA oversees to develop jurisdictional coral reef management priorities and local action strategies (LAS) to address these priorities.

In 2002, the US CRTF adopted "Puerto Rico Resolution," calls for the development of three-year Local Action Strategies (LAS) focusing on the conservation of coral reefs. The goals and objectives of the LAS are linked to those found in the U.S. National Action Plan to Conserve Coral Reefs, adopted by the US CRTF in 2000. There were thirteen goals outlined in the National Action Plan and the US CRTF prioritized six threat areas as the focus for immediate action: (1) over-fishing, (2) land-based sources of pollution, (3) recreational overuse and misuse, lack of public awareness, (4) climate change and (5) coral bleaching, and (6) disease. Additional focus areas were identified in some jurisdictions including: invasive species (Hawaii), population pressure (American Samoa), and maritime industry and coastal construction impacts (Florida).

LAS are locally driven initiatives designed to identify and implement priority actions to reduce key threats to coral reefs through partnerships and collaborative actions among federal, state, territorial, and non-governmental partners. The LAS process has not been consistent through jurisdictions in terms of development and implementation time and priority strategies and this is because jurisdictional priorities differ and the mechanisms to address priorities differ based on distinct ecology, culture and economies. The US Virgin Islands (USVI) LAS process began in 2003 with the establishment of the first marine protected area in the USVI, the St. Croix East End Marine Park (STXEEMP). These areas represent a ridge-to-reef approach to coral reef management and include both coral reef habitat and associated watershed areas. Committees were formed for four LAS topic areas (Table 1): (1) recreational use, (2) land

based sources of pollution, (3) fishing, and (4) lack of awareness. Members of the community were invited to join the committees and develop locally based strategies to mitigate the threats to coral reefs within the STXEEMP. By September 2004, a LAS for each of the focus topic areas were completed and presented to the general public. Community members ranked LAS projects in order of importance: high, medium and low priorities. This information was then used to inform the official first LAS plan for the USVI to be implemented in fiscal years 2005-2007.

Table 1. USVI Local Actions Strategy Planning Committee Members (2005)

LAS Committees	Member Name	LAS Committee Role	Agency
LAS Coordination	Nicholas Drayton	LAS Coordinator	The Ocean Conservancy
	Ursula Anlauf	LAS Coordinator's Assistant	USVI Coastal Zone Management (VI-CZM)
Focus Areas Local Navigators (FALN)	Marcia Taylor	Lack of Awareness Navigator	University of the Virgin Islands-VI Marine Advisory Services
	Stephanie Wear	Recreational Use and Misuse Navigator	The Nature Conservancy
	Raquel Seybert	Recreational Use and Misuse co-Navigator	The Nature Conservancy
	William Tobias	Fishing Navigator	USVI Division of Fish and Wildlife (VI-DFW)
	Wes Toller	Fishing co-Navigator	USVI Division of Fish and Wildlife (VI-DFW)
	Gerson Martinez	Fishing co-Navigator	Fishing Community
	Bill Rohring	Land-based Sources of Pollution Navigator	VI-CZM
	Carol Cramer-Burke	Land-based Sources of Pollution Navigator	St. Croix Environmental Association
Federal Navigators (FN)	Dana Wusinich-Mendez	Lack of Public Awareness and Recreational Use and Misuse FN	NOAA/National Ocean Service
	Aitza Pabon	Fishing FN	NOAA Fisheries/Habitat Conservation Division
	Julie Wright	Land-based Sources of Pollution FN	US Department of Agriculture (USDA) National Resources Conservation Service (NRCS)
	Teresita Rodriguez	Land-based Sources of Pollution FN	US Environmental Protection Agency (EPA)
LAS Project Implementation	Claude Gerard	Coordinator for 2005-2007 STXEEMP LAS Project Implementation	VI-CZM (Assistant Director)
LAS Document (2005)	Susan Curtis	2005-2007 STXEEMP LAS Project Point of Contact (POC)	VI-CZM

Source: Virgin Islands Department of Planning and Natural Resources Coastal Zone Management Division. December 2005. *United States Virgin Islands Local Action Strategy*. St. Croix, USVI.

Building upon the LAS process and in attempt to broaden the scope of geographic LAS areas, in 2009, local and federal resource managers and stakeholders worked together in the priority setting process (PSP) to develop coral reef management priorities, or a priority setting document (PSD), for the USVI territory (The Territory of the United States Virgin Islands and NOAA Coral Reef Conservation Program, 2010). The PSD is used by NOAA in conjunction with the 2010-2015 Coral Reef Conservation Program Goals and Objectives document to direct its investment in activities in each jurisdiction through grants, cooperative agreements and internal funding. Financial sustainability of USVI coral reef management agencies is highly dependent upon federal funding by NOAA (Page et al. 2012) and thus prioritization of coral reef management activities is necessary for appropriate allotment of funds in the Territory. For instance, during 2002-2006, the CRCP provided $1,227,670 for projects in the USVI that addressed LAS threats, with $472,400 directed towards projects that fell within the scope of LAS for overfishing (NOAA Coral Reef Conservation Program, 2006). As a result of the PSD, local and federal resource managers collaborated on the development and implementation of the second LAS process in the USVI. Meeting outcomes suggested the development and implementation of Local Action Strategies in four geographic areas of the USVI: (1) STXEEMP, (2) St. Thomas East End Reserve (STEER), (3) Coral Bay, St. John and (4) Fish Bay, St. John. In 2010, the Lighthouse Consulting Agency was contracted to host workshops for the development of specific LASs to be implemented in Coral and Fish Bay which has resulted in a draft document. To this point, final LASs for these two priority sites have not been completed and for this reason, this document will focus primarily on the progress of fishing-related LASs in the STEER and STXEEMP. The STEER and STXEEMP management plans serve as the LAS guiding documents for addressing coral reef management priorities in the Territory.

Following the priority setting and LAS processes, Page et al. 2012 assessed the capacity building needs for successful implementation of coral reef management priorities and LASs; and presented a type of diagnosis of the complex set of issues that affect coral reef management efforts in the USVI. Page et al. 2012 summarized their findings and recommendations in *An Analysis of Issues Affecting the Management of Coral Reefs and the Associated Capacity Building Needs in the United States Virgin Islands*. The methodology used for assessing coral reef management capacity was qualitative and adaptive in nature: (1) an extensive literature review of documents relevant to the PSD was done; (2) high priority local action strategy projects and case studies were chosen for assessment of implementation status and outcomes; (3) several interviews of key LAS and management contacts were held to obtain information on the selected LAS projects and case studies; (4) Projects were re-prioritized and capacity building recommendations were made. See Appendix 3 for specific recommendations for building coral reef management capacity in the USVI as proposed by Page et al, 2012, including fisheries-related recommendations for high priority projects. The purpose of this inventory is to build on the fisheries-related component of the capacity assessment by providing an inventory of all LAS project implementation progress for addressing fishing impacts in the USVI.

1.3 Inventory Rationale

Coral reefs and fisheries resources in the USVI are currently under pressure from several natural and anthropogenic stressors including climate change, land based sources of pollution and fishing impacts (NOAA Coral Reef Conservation Program Domestic Goals and Objectives 2010-2015). Federal and territorial resource managers recognize the need to manage and conserve these resources taking into consideration the sustainability of the resources, livelihoods, economy and culture. The previously mentioned priority setting process set the pace for the development of

Local Action Strategies for four geographic areas within the US Virgin Islands. Building upon the recent capacity assessment for coral reef management in the USVI (Page et al. 2012), this document provides an inventory perspective of fishing-related LAS projects proposed for the four LAS geographic areas and their implementation status as of the year-end 2012; due to lack of finalized LASs for Coral and Fish Bay, there will be limitations to the extent of which projects are assessed and described in this document.

2.0 Inventory Methodology for Assessing LAS Project Implementation Status

The US Virgin Islands Fisheries Local Action Strategies projects proposed for LAS geographic areas: St. Croix East End Marine Park, St. Thomas East End Reserve, Coral Bay, St. John and Fish Bay, St. John, were inventoried to determine implementation status. An extensive literature review of priority setting documents, Coral Reef Conservation Program's LAS database and other relevant resources was done to compile information regarding project implementation status into an inventory matrix per geographic LAS area. In some instances where information was lacking, informal phone/in-person discussions were had with key contacts that played a role in the development of USVI fisheries LAS for each geographic area or are current/former project coordinators.

The projects were inventoried by LAS geographic area and implementation status (i.e. Not Initiated, In Progress, Completed). Section 3 illustrates the inventoried projects with supplemental information, e.g. project coordinator (s), project lead agency and partners, whether funds have been committed or sought and a summary of implementation progress. New priorities (High, Medium and Low) were assigned to projects by Sustainametrix (2012) and thus this document aims to determine project implementation status, provide a basis for project implementation status and to provide recommendations for moving projects forward in line with the USVI coral reef management capacity assessment, not to reprioritize projects.

3.0 USVI Fisheries LAS Projects: Progress

The USVI marine environment is comprised of several benthic communities (Figure 1) that serve as essential fish habitat (EFH). EFH is defined in the Magnuson-Stevens Act (MSA) as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." As per the 1996 amendments to the MSA, fisheries management councils (FMCs) were mandated to identify and protect important marine and anadromous fisheries habitat. The USVI falls within the regulatory jurisdiction of the Caribbean Fishery Management Council (CFMC). CFMC designated mangroves, wetlands, seagrass beds, coral reefs and sandy bottom as EFH. These designations were made in recognition of the notable decline in fisheries resources globally and locally. USVI fishery resources and EFH are under constant pressure from both anthropogenic and natural factors that threaten the sustainability and resilience of these resources and habitats (Beets and Rogers, 2000; MSA, 2007). Thus, the fishing LAS projects proposed for the four LAS geographic areas aim to increase the probability for fisheries resources and habitat to exist; thus maintaining the ecology, culture and economy of the USVI. The following sections illustrate the progress of the fishing local action strategies proposed for the St. Croix East End Marine Park and the St. Thomas East End Reserve, their priority designated during the LAS process and their current implementation status. Note that a brief summary regarding the current LAS process for developing LASs for Fish and Coral Bays in St. John is provided. This inventory is meant to portray the status of Fishing LAS projects in the four LAS geographic areas within a snapshot of

time and is subject to change at any time to accommodate the adaptive nature of ecosystem-based management efforts.

3.1 St. Croix East End Marine Park Fishing LAS

During the first LAS process, 2003-2005, many projects were identified by community working groups to address overfishing in the newly designated MPA, STXEEMP solely, with aim to address fishing-related threats to fisheries resources and habitats. The initial projects were to address goals for fisheries management set forth in the STXEEMP management plan developed in 2002 (Table. 2), which served as the LAS document for STXEEMP until the formal US Virgin Islands Local Action Strategy document was prepared (DPNR-CZM, 2005).

Table 2. STXEEMP Management Plan Goals for Sustaining Fisheries Resources

STXEEMP Management Plan Goals for Sustaining Fisheries Resources
1. Provide STXEEMP managers with sufficient baseline information to assess the current status of coral reef ecosystems, existing harvest patterns of fisheries resources and to determine the relative impact of fishing with in the marine park.
2. Further develop and implement a flexible and adaptive management strategy for protecting coral reef and fishery resources.
3. Provide marine park managers with adequate means to enforce regulatory policies and improve public awareness of those regulations.
4. Enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.
5. Provide park managers with continuous monitoring information on the status of coral reef ecosystems, fisheries resources, usage of those resources, compliance with regulatory policies, and issues of enforcement.
6. Assist park managers with public outreach, education, and open dialog as it relates to the management of fisheries resources.
7. Gather information to determine the effectiveness of the park in the conservation of coral reef ecosystems and the enhancement of fisheries resources.
8. Strengthen local Fishery Advisory Committees (FACs) so that they can address those fisheries issues that directly impact marine park resources, but also extend beyond park boundaries (either island-wide fisheries issues or as territory-wide concerns).
9. Manage coastal wetland areas so as to maintain their capacity to filter upland-derived sediments, to prevent overharvesting of the organisms that utilize these habitats, and to preserve the integrity of these habitats as nursery areas for numerous marine organisms.
10. Evaluate the impacts of marine debris on coral reef ecosystems within the park.

Source: STXEEMP management plan 2002

The US Virgin Islands Local Action Strategy document did not provide the project priority ranks (i.e. High, Med, Low). Some of the projects were reprioritized by the DPNR CZM Point of Contact (POC) in 2007. Page et al. 2012 assessed and reprioritized only those Fishing LAS projects that were considered high priority. The Fishing LAS goals, objectives and projects listed below are those that were identified in the USVI Final LAS document (2005) which was specific to the STXEEMP:

<table>
<tr><td colspan="3">Goal 1. To provide resource managers with sufficient baseline information to assess the current status of coral reef ecosystems within the STXEEMP, to assess existing harvest patterns of fisheries resources from the STXEEMP, and to determine the relative impact of fishing within the STXEEMP.</td></tr>
<tr><td><u>Objective 1.1</u>: To conduct research to assess the current status of coral reef ecosystems within he STXEEMP.

Project 1: Ecosystem Assessment – Map, survey and inventory coral reef habitats within the STXEEMP.</td><td>Project Status:

In Progress</td><td>Lead Agency: STXEEMP Office, DPNR CZM
Proposed partners: UVI, DPNR CZM, NOAA CRCP
Proposed Funding Source: NOAA CRCP
Expected Costs: $150,000 annually. DPNR CZM received funding to implement survey activities through NOAA Coral Management Grants -$15,000 in FY05; $30,000 in FY03 NOAA and $30,000 in FY06. This money has been utilized for Acropora studies within the park for which data has not been analyzed and for support to the Territorial Coral Reef Monitoring Program.</td></tr>
<tr><td colspan="3">Description: Obtain baseline information on key indicator species including conch, lobster, and selected reef fish species. These studies must adequately account for intraannual variation. Monitoring of coral reef ecosystems would provide data on Diadema density, Elkhorn coral recovery, Fish and Invertebrate density, diversity and biomass, Herbivorous fish density, Predatory fish density, Coral diseases, Coral bleaching, Nutrient levels, Sedimentation, Light attenuation, Live coral percent cover, Macroalgal diversity and percent cover.</td></tr>
<tr><td colspan="3">Indicator: Benthic habitat maps, surveys and inventory reports; scientific publications.</td></tr>
<tr><td colspan="3">Update: In 2000, DPNR CZM implemented a long-term Territorial Coral Reef Monitoring Program (TCRMP) in partnership with UVI and DPNR DFW with support from NOAA. The monitoring program has enabled the Territory to document baseline conditions prior to the establishment reserves and trends in benthic marine communities and fisheries resources as a basis for improved management and protection. Throughout the life of the program, an increasing number of monitoring sites have been established throughout the territory totaling 33 sites. 14 of these sites are located in the STXEEMP and a recent summary report of data (Smith, 2013) provides information regarding benthic assessments and fish surveys on various biological parameters. NOAA Biogeography Branch has also created benthic habitat maps for the STXEEMP with data layers and has implemented a land-sea characterization of the park (Pittman et al. 2010). This was done in conjunction with the ongoing National Coral Reef Monitoring Program (NCRMP). NCRMP has been designed to build upon a decade of CRCP supported monitoring and to provide a consistent flow of information to assess and report the status and trends of environmental conditions, living reef resources and the people and process that interact with coral reef ecosystems. The data collected through NCRMP is housed in a large online database which may be utilized by the general public and relevant reports may be found on the website (NCCOS CCMA http://ccma.nos.noaa.gov/about/biogeography/biogeo_prod.aspx). Various other agencies have also either established monitoring points or utilized data from established points (Figure 1) to implement various project goals and objectives that align with Fishing LAS Objective 1.1 (see Pittman et al. 2012 for more details regarding specific data parameters and those agencies that implement coral reef ecosystem monitoring in STXEEMP and other areas in the USVI). An economic evaluation of coral reef ecosystems in the USVI has also been completed as of 2011 (van Beukering et al. 2011) which encompasses data collected regarding STXEEMP reef ecosystems.</td></tr>
<tr><td colspan="3">Suggested Next Steps: Perform a review of existing STXEEMP ecosystem-based research into a report with specific management recommendations to be used for revising existing policy, rules and regulations and for creation of new ones. The DPNR CZM and STXEEMP office should develop an agreement with the University of the Virgin Islands to obtain an annual data report summarizing ecological resource and biological data at park TCRMP sites and consider adding or alternating data collection sites. Create a database to store all STXEEMP relevant historic and current data, reports, etc.</td></tr>
</table>

Goal 1. *To provide resource managers with sufficient baseline information to assess the current status of coral reef ecosystems within the STXEEMP, to assess existing harvest patterns of fisheries resources from the STXEEMP, and to determine the relative impact of fishing within the STXEEMP.*

Objective 1. 2: To conduct research to assess fishing within the STXEEMP. **Project 1:** Fishing Assessment – Identify commercial and recreational fishing activities within the STXEEMP.	**Project Status:** *In Progress*	**Lead Agency:** STXEEMP Office, DPNR CZM, DPNR DFW **Proposed partners:** NMFS, NOAA CRCP, USFWS **Expected Costs:** $30,000 Annually; funds were never obtained through the lead agencies. **Proposed Funding Source:** NOAA

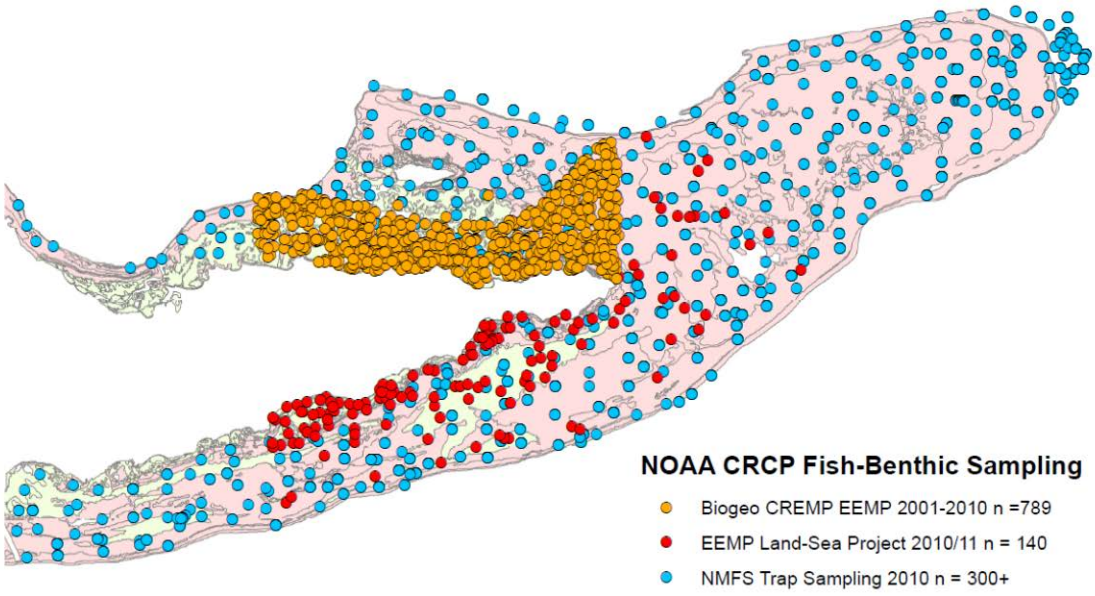
Description: Obtain catch and effort data, including landing sites, gear types, catch composition, biostatistical measurements, etc.

Indicator: Annual report on fishing activity; fishing use maps within STXEEMP; publications.

Update: Over the past decade, both commercial and recreational fisher surveys have been employed to assess fishing activity through several sites Territory-wide (Agar et al., 2005; Catanzaro et al. 2002; Jeffrey et al. 2005; Kojis, 2004; Kojis and Quinn, 2011; Mateo , 2000; Mateo, 2001; Mateo, 2004; Rothenberger et al. 2008, Toller, 2003; Toller et al. 2005, Valle-Esquivel and Diaz, 2003). Specific to the STXEEMP, there has not been any data collected regarding fishing activity specifically in the park as far as surveys are concerned by the park office/lead agency. Through various working groups that had been developed for creation of the STXEEMP management plan in 2002, the management plan update in 2012 and crafting of both jurisdictional management priorities and LASs, fishing activity has been discussed anecdotally. There were no official surveys distributed to quantify park use for the development of the management plan or the zoning plan (amended in 2012). This effort is being done for commercial fishing activities territorially by DPNR DFW through the collection of fisheries independent data obtained through commercial fisher catch reports and port sampling. This data collected is forwarded to the NOAA SEFSC for further analysis and interpretation. Reports are then given to CFMC which is the entity responsible for working with NOAA SFD to draft management plans and rules and regulations based on the interpreted data. Results include information such as landing sites and areas fished, gear use, and species caught which may be useful information for assessing fishing pressure in STXEEMP. A study done by NOAA SEFSC (2009-2011) looked at creation of a fisheries independent cooperative survey which assessed the effectiveness and efficiency of the fish trap fishery on the St. Croix shelf. This project addressed the current fishery data-limitations in the US Caribbean and the need for a paradigm shift in data collection strategies. This work provided the first comprehensive spatial evaluation of fish abundance for any US Caribbean territory and provides a model for developing similar programs in other locations. By incorporating understanding of coral reef ecosystems and utilizing existing CRCP products, a program can be designed that is both efficient and intensive. This project provided essential information on reef fish that may lead to effective management via both MPAs (e.g. STXEEMP) and more traditional fishery management tools. Figure 1 illustrates data collection points for fish benthic surveys in STXEEMP, funded by CRCP. On another note, territorially, there is a lack of recreational fishing activity data as there is no official data collection program in place. Currently, there are two pilot recreational fishing activity efforts in place through the Marine Recreational Intercept Program and NOAA CRCP; methods include creel surveys and a socio-economic assessment. This information will be used ultimately to inform the development of a recreational data collection program to be implemented territory-wide. Data may also be used to assess recreational fishing activity pressure and create site-specific recreational fishing licensing opportunities for STXEEMP to ensure financial sustainability. Local managers are discussing the implementation of a coastal use mapping study for STXEEMP to mirror that which was completed for STEER in 2012 by the NOAA Biogeography Branch. Figure 1 illustrates points for fish benthic surveys that have been funded through NOAA CRCP.

Suggested Next Steps: Conduct a human use mapping assessment for STXEEMP. Use existing human use research and data (existing and current projects) to amend zoning rules and regulations as well as to support public access and sustainable resource use. Request summarized areas fished data relevant to STXEEMP, gear types, and estimations of commercial fisher catch data from DPNR DFW to inform strategies to reduce fishing pressure. Develop a resource use monitoring protocol to inform adaptive resource management strategies, to be implemented every 3-5 years in coordination with revision of the STXEEMP management plan.

Figure 1. NOAA CRCP Fish Benthic Sampling in St. Croix East End Marine Park



This figure illustrates NOAA CRCP Fish benthic sampling points within STXEEMP. Source: Pittman, et al., 2012

<table>
<tr><td colspan="3">Goal 1. To provide resource managers with sufficient baseline information to assess the current status of coral reef ecosystems within the STXEEMP, to assess existing harvest patterns of fisheries resources from the STXEEMP, and to determine the relative impact of fishing within the STXEEMP.</td></tr>
<tr><td><u>Objective 1.3</u>: To evaluate the impact of fishing, relative to other threats, upon the coral reef ecosystems within the STXEEMP.

Project 1: Evaluate results of the Ecosystem Assessment and the Fishing Assessment.</td><td>Project Status:

In Progress</td><td>Lead Agency: STXEEMP Office, CZM
Proposed partners: NMFS, NOAA CRCP, USFWS, DFW
Expected Costs: None specified.
Proposed Funding Source: specified.</td></tr>
<tr><td colspan="3">Description: Synthesize with data from non-fishing impacts and formulate recommendations for regulatory change based on magnitude of impact.</td></tr>
<tr><td colspan="3">Indicator: Annual comprehensive report.</td></tr>
<tr><td colspan="3">Update: Annually, summaries and reports are produced through the TCRMP and over the past decade several reports and publications have been released through several of the agencies that have conducted ecosystem and fishing assessments within the Territory and specifically for the STXEEMP (see Pittman et al. 2012 for more details). However, there has been no official implementation of either an ecosystem or fishing activity monitoring by the lead agency-DPNR CZM. Some monitoring has been done by the park office and the DPNR DFW (within the park and territorially) assessing lobster, conch and Acropora but these surveys have not been consistent through time, nor have there been consistent extensive reports on data collected. Also see Objectives 1.1 and 1.2 Updates section for several references to assessment reports.</td></tr>
<tr><td colspan="3">Suggested Next Steps: See Next Steps Objective 1.2 Project 1.</td></tr>
</table>

Goal 2. *To further develop and implement a flexible and adaptive management strategy for protecting coral reef and fishery resources.*		
<u>Objective 2.1</u>: To further develop the STXEEMP management strategy. **Project 1:** Conduct stakeholder meetings for input on fishing activities and regulatory changes.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office, CZM, DFW **Proposed partners:** CFMC, NMFS, USFWS, FACs **Expected Costs:** $10,000 when updates to amendments are necessary. $10,000 was secured by the STXEEMP Office DPNR CZM through a NOAA Coral management grant to implement these stakeholder meetings approximately 5 years ago. The funds have been reprogrammed since and the park office has not proposed to do this as the lead agency.
Description: These meetings could be used to develop rules and regulations and amendments to the management plan as a means for adaptive planning. May need focused group meetings, structured to inform rules and regulation revisions and management plan revisions.		
Indicator: Amendments to fishing regulations territory-wide and park specific.		
Update: Stakeholder meetings have been held for the revision of the STXEEMP management in the latter part of 2012. Fisheries strategies were the theme of one stakeholder meeting; stakeholders were encouraged to provide feedback. These meetings were led by The Nature Conservancy and funded through a cooperative agreement with NOAA CRCP. The revised plan should be available in October 2013. The Caribbean Fishery Management Council is the entity authorized by federal mandate to implement regulations in the EEZ (3-200mi offshore). Though STXEEMP does not necessarily fall within their jurisdiction, the Territory has been moving toward compatibility of fishing regulations in the EEZ and territorial waters. The CFMC is currently working to draft fishery management plans (FMPs) for each island district in the USVI (i.e. St. Thomas, St. John and St. Croix). Thus, the amendment of fishing regulations is a continuous discussion at the territorial and regional level with outcomes that influence fishing in all USVI waters. The only way that fishing may be regulated by specific STXEEMP bylaws is through the zoning plan which has been finalized as of 2011. This can be considered an on-going objective based on the dynamics and uncertainty associated with fisheries resources and communities.		
Suggested Next Steps: Prior to developing the resource use monitoring protocol and during implementation thereof, stakeholders meetings should be held to inform the process continuously. These meetings should be public, open to the entire fishing community which is that of the St. Croix community (nationally designated as a fishing community in 2010). Whenever any rules, regulations or policies are proposed or up for amendment, stakeholder meetings should be held to inform the process. Stakeholder meetings should be considered as a component of a larger communications and outreach strategy to be developed for the STXEEMP specifically, targeting the appropriate audiences for specific management actions and outreach and education opportunities. This communications and outreach strategy should be developed prior to moving forward with implementation of focus group meetings and any other community engagement so as to bring structure to the way in which stakeholders are engaged; this ultimately makes the evaluation of effectiveness easier.		

Goal 2. *To further develop and implement a flexible and adaptive management strategy for protecting coral reef and fishery resources.*		
<u>Objective 2.1</u>: To further develop the STXEEMP management strategy. **Project 2:** Develop fishing regulations for the STXEEMP with additional public input.	**Project Status:** *In Progress*	**Lead Agency:** STXEEMP Office, CZM, DFW **Proposed partners:** CFMC, NMFS, USFWS, FACs **Proposed Funding Source:** None specified. **Expected Costs:** None specified.
Description: None.		
Indicator: Amended and new fishing regulations territory-wide and park specific.		
Update: Stakeholder meetings have been held for the revision of the STXEEMP management in the latter part of 2012. Fisheries strategies were the theme of one stakeholder meeting; stakeholders were encouraged to provide feedback. These meetings were led by The Nature Conservancy and funded through a cooperative agreement with NOAA CRCP. The revised plan should be available in October 2013. The Caribbean Fishery Management Council is the entity authorized by federal mandate to implement regulations in the EEZ (3-200mi offshore). Though STXEEMP does not necessarily fall within their jurisdiction, the Territory has been moving toward compatibility of fishing regulations in the EEZ and territorial waters. The CFMC is currently working to draft fishery management plans (FMPs) for each island district in the USVI (i.e. St. Thomas, St. John and St. Croix). Thus, the amendment of fishing regulations is a continuous discussion at the territorial and regional level with outcomes that influence fishing in all USVI waters. The only way that fishing may be regulated by specific STXEEMP bylaws is through the zoning plan which has been finalized as of 2011. This can be considered an on-going objective based on the dynamics and uncertainty associated with fisheries resources and communities. This particular project is an extension of the previous. The project aims to obtain *additional public input* for developing fisheries regulations, however, it is not clear what is meant by *additional public input;* this needs to be clarified in order to initiate planning for this project.		

Suggested Next Steps: Through the implementation of stakeholder meetings and review of data from past and current studies, zoning rules and regulations within the park should be amended. In addition, see Objective 2.1 Project 1 Next Steps section.

Goal 2. *To further develop and implement a flexible and adaptive management strategy for protecting coral reef and fishery resources.*		
Objective 2.2: To implement the STXEEMP management strategy. **Project 1:** Implement park zonation and regulations for the reduction of fishing effort.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** DPNR CZM/STXEEMP Office **Proposed partners:** None specified. **Expected Costs:** $500,000; in 2006, $2000 were secured through NOAA CRCP to implement stakeholder focus groups and in 2008 CRCP provide $35,000 for buoy installation. $5000 per year has been provided since 2008 and on-going through the CRCP territorial cooperative agreement with USVI DPNR CZM.
Description: None.		
Indicator: Zoning, rules and regulations, maps and plan. Zoning buoys installed.		
Update: In 2011, zoning rules and regulations informed development of a STXEEMP zoning plan as a result of stakeholder focus groups. There are four zones designated within STXEEMP boundaries (Figure 2): (1) the *Open Zone/Park*-Wide, where taking or injuring coral, altering the seabed, discharging materials, groundings, anchoring on hard bottom or coral communities, and diving without a dive flag are prohibited; (2) the *Recreational Zone*, where snorkeling, diving, boating and shore-lined fishing is allowed. Catch-and-release guide fishing and cast net bait fishing are allowed with a Marine Park Permit*. All other traditional fishing is prohibited (including, but not limited to, fish traps, spearfishing and collection of lobster, conch and whelk); (3) the *Wildlife Preserve Zone*, where nesting female sea turtles are protected to lay eggs- specific to beaches in East End, Isaac, Jack and Boiler Bays; and (4) the No Take Zone, where nearshore environments including coastal mangroves, sea grass beds, lagoonal patch reefs and linear reefs are protected. Operating a personal watercraft, extraction and all fishing is prohibited. Buoys designating zone and park-wide boundaries have been installed through funding from NOAA CRCP, with some funding from National Fish and Wildlife Foundation and technical support from The Nature Conservancy in 2008. Current ecological and socio-economic research may support the need for amendments to park zoning rules and regulations and this is being considered by DPNR CZM.		
Suggested Next Steps: In maintaining the adaptive concept of management, implement the process for amending zoning rules and regulations according to available ecological and socio-economic data to coincide with the management plan update. Develop the capacity to enforce zoning rules and regulations through the Division of Environmental Enforcement and STXEEMP interpretive rangers. Evaluate the effectiveness of enforcement to inform the adaptive management of park zones.		

Figure 2. St. Croix East End Marine Park Zoning Map

This figure illustrates STXEEMP zoning. Red dots represent navigational aids (A,B,C) and buoy markers that designate zones (Z-1 to Z-15). Source: STXEEMP Handout.

Goal 2. *To further develop and implement a flexible and adaptive management strategy for protecting coral reef and fishery resources.*		
Objective 2.3: To perform a periodic review (at 3-5 years) of the effectiveness of STXEEMP management strategies and consider alternative strategies. **Project 1:** Compare the observed response of coral reef resources in Buck Island Reef National Monument to those within the STXEEMP.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** None specified **Lead Agency:** DPNR CZM**,** STXEEMP office **Proposed partners:** None specified. **Expected Costs:** None specified.
Description: None.		
Indicator: Revision of the 2002 STXEEMP management.		
Update: To date, the comparison of coral reef resources have not been compared to those within the STXEEMP. The land to sea characterization is very different compared to Buck Island's and the parks have been managed using considerably different strategies, by different entities, varied enforcement and for differing periods of time, with STXEEMP being the younger of the two (i.e. 10 years since designation and Buck Island being 52 years since designation). This may be the reasoning behind this project not being completed. However, there have been many projects implemented over the last 10 years to characterize coral reef resources in the STXEEMP (Pittman et al, 2009). There is a substantial amount of information available from ecological studies conducted within, adjacent or near to the STXEEMP that are very informative and may be useful for guiding the park management plan update which has exceeded the 3-5 year revision objective.		
Suggested Next Steps: To gather available data and public input to inform the revision of the STXEEMP management plan. Once the plan is developed, then park staff and CZM should strategically initiate strategies while taking into account the STXEEMP sustainable financing plan (2012) so that the approach to management is comprehensive and sustainable.		

Goal 2. *To further develop and implement a flexible and adaptive management strategy for protecting coral reef and fishery resources.*		
Objective 2.3: To perform a periodic review (at 3-5 years) of the effectiveness of STXEEMP management strategies and consider alternative strategies. **Project 2:** If necessary, evaluate alternative management actions such as rotating closures.	**Project Status:** *In Progress*	**Proposed Funding Source:** None specified. **Lead Agency:** None specified. **Proposed partners:** None specified. **Expected Costs:** None specified. However, TNC has received funds through NFWF to update the STXEEMP management plan.
Description: None.		
Indicator: Revision of the 2002 STXEEMP management.		
Update: The Nature Conservancy has been working to update the STXEEMP management plan over the past year and a half with funding from a NFWF MPA grant. TNC along with other MPA supporting managers (including but not limited to NOAA jurisdictional liaisons) and conservationists comprise a working group that has been meeting regularly to guide the revision of the plan. TNC held a series of meetings with stakeholder groups (October 2012) with aim to strategize for addressing the park's target resources and has compiled this information. To date, the working group has met in June to narrow down and prioritize target objectives and strategies and the next meeting will be held in August to review a draft of the updated management plan. The final plan was expected at the end of 2013 but has still not been finalized to date.		
Suggested Next Steps: TNC must finalize the STXEEMP management plan. Build STXEEMP administrative capacity by filling two vacant key positions, i.e. MPA Coordinator and Territorial Coral Initiative Coordinator (this one has been recently filled), to implement management strategies outlined in the soon to be updated STXEEMP management plan. These individuals should then work with local and regional partners to build management capacity for the STXEEMP and implement management strategies efficiently and effectively, also allowing for flexibility to truly be adaptive. Once the management plan has been implemented, in year 3 the stakeholder engagement and data compiling should be initiated to support the next management plan revision. Also, the capacity to enforce park rules and regulations through the Division of Environmental Enforcement and STXEEMP interpretive rangers should be further developed; this effort can be support with appropriate outreach and education to target building compliance. Evaluate the effectiveness of enforcement and outreach and education to inform the adaptive park management comprehensively. Develop or adopt a structured approach to evaluating the ecological, biological, socio-economic and cultural performance of STXEEMP management through use of appropriate tools and methodologies, e.g. USVI Capacity Assessment recommendations, CRCP MPA Checklist, "Are MPA's Working?" CRCP project biological score cards, Elinor Ostrom's approach to evaluating human interactions within social ecological systems (SESs) etc. Use the results to inform the STXEEMP adaptive management strategy.		

Goal 3. *To provide STXEEMP managers with adequate means to enforce regulatory policies and improve public awareness of those regulations.*		
Objective 3.1: To strengthen enforcement in the STXEEMP through capacity building. **Project 1:** Secure funding for the hiring, training and continued support of STXEEMP enforcement officers through federal grants.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office, CZM **Proposed partners:** DEE **Expected Costs:** $180,000, received $90,000 in FY05 from the NOAA Coral Management Grant
Description: None.		
Indicator: Hired and trained at least two enforcement officers devoted to STXEEMP duties by 2006.		
Update: In 2005, funds were solicited to achieve project objectives however, only $90, 000 was secured from the NOAA Coral Management Grant. An agreement was made between CZM and DEE to split salary costs for one enforcement officer(s) to dedicate a portion of his/her time (40 hours per week) attending to STXEEMP enforcement duties. NOAA CRCP agreed to continue to fund a portion of this officer's salary in outlying years to ensure that the STXEEMP rules are being enforced. Due to capacity gaps at DEE, the officer is usually present within the park when called upon as a result of the incident which is not an ideal situation. There is also internal agency lack of communication between CZM and DEE and no log exists for the officer(s)'s time spent tending to STXEEMP enforcement. Interpretive rangers are usually the first to observe and respond to a violation and they have no authority to enforce park rules and regulations, only to give warnings to violators. However, efforts are being made through the NOAA CRCP Education and Outreach for Enforcement project that has been on-going since 2011. The aim of this project is to build enforcement capacity to enforce marine resource management rules and regulations effectively. Since initiation of this project, several officers in both St.		

Thomas and St. Croix have been taught to swim, snorkel and/or dive, have undergone relevant fisheries courses and will be undergoing training along with STXEEMP interpretive rangers at the Florida Keys National Marine Sanctuary (FKNMS) in 2014.
Suggested Next Steps: Currently, an enforcement officers training strategic plan is being created. This project has also produced gap analyses of existing coral reef management policies in the USVI and marine-based violations data. Proposed for FY14 is the development of a strategic plan for building enforcement capacity as well as securing legal counsel for assisting officers in defending violation cases. Specific to enforcement officers scheduling, work hours should be staggered to allow for patrol during weekends and nights (when most fishing and recreational activity occurs); this may result in the need for hiring additional enforcement officers or perhaps officers specifically for park duties.

Goal 3. *To provide STXEEMP managers with adequate means to enforce regulatory policies and improve public awareness of those regulations.*		
Objective 3.1: To strengthen enforcement in the STXEEMP through capacity building. **Project 2:** Solicit funds from Federal programs for the purchase, acquisition and maintenance of equipment for enforcement officers and park rangers.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM and DEE **Expected Costs:** $137,000 not secured
Description: None.		
Indicator: None specified.		
Update: It has not been determined at this point what kind of equipment was needed at the time of prioritizing this project. However, through the NOAA CRCP Education and Outreach for Enforcement project, several materials and equipment have been purchased for both St. Thomas and St. Croix, including: (1) development of a fillable form in Microsoft Access for officer incident reports, (2) purchase of toughbooks for use by officers in the field for incident reporting, and (3) purchase of snorkel and SCUBA gear. These items have been developed/purchase to support effective enforcement of marine resource rules and regulations throughout the USVI and will also be used to enforce STXEEMP rules when there is capacity to do so.		
Suggested Next Steps: Develop and implement a formal enforcement plan for the territory with sections devoted to enforcement within LAS areas and HAPCs specifying needs, goals, objectives and strategies for LAS area interpretive range systems.		

Goal 3. *To provide STXEEMP managers with adequate means to enforce regulatory policies and improve public awareness of those regulations.*		
Objective 3.2: To increase knowledge of user groups and general public about the importance of fishing regulations in the STXEEMP. **Project 1:** Develop and implement an STXEEMP park ranger program.	**Project Status:** *Completed*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM, DEE and DFW **Expected Costs:** $100,000 not secured
Description: Hire local fishers in the capacity of park rangers/interpretive officers who perform education and outreach, monitor resources, obtain usage statistics, and assist enforcement officers.		
Indicator: Hired and trained interpretive rangers, at least two, tasked with developing and implement outreach strategies and projects that are under a program umbrella.		
Update: Two interpretive rangers were hired in FY05 with funding from CRCP. One of these rangers is a part-time commercial fisher. These individuals are tasked with providing park visitors with interpretive tours of the park that includes historical and cultural lessons and lessons on rules and regulations. Beyond organized educational tours, rangers are also tasked with informing rules and regulations violators of their wrong-doings relevant to park rules and ultimately what the consequences may be. Through the NOAA CRCP Education and Outreach for Enforcement project, these rangers have also received similar trainings that enforcement officers have and will continue to receive training in upcoming year specific to fisheries rules, regulations and ecology.		
Suggested Next steps: To continue capacity building through providing enforcement and rangers with relevant training opportunities. Develop and implement a formal enforcement plan for the territory with sections devoted to enforcement within LAS areas and HAPCs specifying needs, goals, objectives and strategies for LAS area interpretive range systems.		

Goal 3. *To provide STXEEMP managers with adequate means to enforce regulatory policies and improve public awareness of those regulations.*		
<u>Objective 3.3</u>: To insure and improve compliance with STXEEMP regulations. **Project 1:** Establish a system of navigational and boundary marker buoys to delineate use zones (e.g. no take areas, recreational areas) within the STXEEMP.	**Project Status:** *Completed*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** DFW, CZM, COE **Expected Cost:** $500,000 for initial purchase and installation, plus $10,000 per year for maintenance. In 2008, NOAA CRCP provided $35,000 for initial purchase and installation. Since then, CRCP have provided ~$10,000 annually for maintenance. TNC also secured funding through a NFWF grant in 2009 to assist with installation and maintenance.
Description: None.		
Indicator: Installed navigational aids and boundary marker buoys.		
Update: *Completed*. Buoys designating zone and park-wide boundaries have been installed through funding from NOAA CRCP, with some funding from National Fish and Wildlife Foundation and technical support from The Nature Conservancy in 2008. However, the zoning plan was not developed until 2011 which also postponed buoy installation until 2011. 18 buoys were installed, 3 navigational aids at the 3mi from shore limit and 15 boundary markers within the park that delineate zones. Through time, these markers have not been properly maintained as contractors have not been secured to do so, thus the funds secured for maintenance in years following installation have not been spent. Due to lack of maintenance, the three navigational aid buoys have broken away but were retrieved and are now being held out of the water thus boundaries are currently ill-defined which could lead to misinterpretations by park users for what activities can and can't be done in different zones.		
Suggested Next steps: CZM must spend funds to secure contractors to maintain buoys in order to avoid detriment to buoys and ultimately the zoning plan.		

Goal 3. *To provide STXEEMP managers with adequate means to enforce regulatory policies and improve public awareness of those regulations.*		
<u>Objective 3.3</u>: To insure and improve compliance with STXEEMP regulations. **Project 2:** Establish adequate signage on land to inform the public of park regulations.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM **Expected Costs:** $10,000 secured through FY08 NOAA Coral Management Grant; $5000 reprogrammed from FY10 funds for lobster monitoring project that has not been initiated.
Description: None.		
Indicator: Installed navigational aids and boundary marker buoys.		
Update: There are approximately 10 signs within the STXEEMP that either welcome visitors to the park or state the mission of the park in one sentence. These signs for the most part are small (12" by 18" in dimensions) with the exception of those that define the park mission which are slightly larger. Thus the existing signage does not accommodate information on park rules and regulations at key points (e.g. fishing sites).		
Suggested Next Steps: Develop and install signs that include information of park rules and regulations and their significance to conservation and sustainability of both resources and human use should be developed and placed at key points within the park (i.e. all sites that experience extensive recreation.		

Goal 3. *To provide STXEEMP managers with adequate means to enforce regulatory policies and improve public awareness of those regulations.*		
<u>Objective 3.4</u>: To reduce habitat damage caused by anchoring within the STXEEMP. **Project 1:** Hire local contractors to install a system of mooring buoys within the STXEEMP that will enable users to comply with anchoring regulations.	**Project Status:** *Completed*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM, DFW, COE **Expected Costs:** $20,000 for purchase and installation, $4000 annually for maintenance. A total of $18,213 was granted in 2011 for purchase, installation and initial maintenance of the mooring buoys.

Description: None.
Indicator: Installed moorings.
Update: In 2011, approximately 21 moorings were installed in STXEEMP waters in locations where boaters would be allowed to tie up. However, due to much complaints from the boating community that appropriate sites for mooring placement was not chosen, the moorings were removed and have not been re-installed since. There are privately owned moorings in the park at this time.
Suggested Next Steps: To reduce non-compliance and impacts to marine habitats, a benthic survey report should define the profile of desired mooring locations to determine sites that would be most ideal for reduce impact to resources and boaters. Then, a mooring installation plan and system should be developed and implementing accounting for appropriate monitoring and maintenance; moorings should then be reinstalled.

***Goal 4**. To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
<u>Objective 4.1</u>: To determine socioeconomic impacts of closures and restrictions upon fishers and local communities. **Project 1:** Conduct socioeconomic studies of affected recreational and commercial user groups.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** CZM **Proposed partners:** STXEEMP Office, DPNR **Expected Costs:** $57,500 secured in FY08 from CRCP
Description: None.		
Indicator: Improved buy-in and compliance from stakeholders, reduced threats to park resources.		
Update: Though, there have not been many socio-economic studies beyond small surveys done to inform development of a sustainable finance plan completed by The Nature Conservancy in 2010 and revised in 2012 by the NOAA Coral Fellow. Several socio-economic studies have been done territory-wide as a means to assess potential impacts or effects of specific regulations but none specific to the STXEEMP. NOAA CRCP has funded a socio-economic assessment of the St. Croix gill and trammel net ban that occurred in 2008. This project will support evaluating the socio-economic impacts of the gill and trammel net ban (and buyback) in St. Croix. The net ban was implemented to afford greater protection to overfished stocks in the area. Socio-economic program evaluations are important because they help examine whether the desired outcomes are achieved and whether the observed outcomes correspond to the policy intervention rather than other confounding effects. In the case of the U.S. Caribbean, the results of this work will provide insight into the effectiveness of effort and capacity reduction programs. In 2011, the funds received from FY08 were used to contract a team to develop an Economic Evaluation for coral reef uses in the USVI.		
Suggested Next Steps: Proposed for 2013-2014 is a human use mapping assessment for the STXEEMP by The Nature Conservancy, similar to that done by NOAA Biogeography for STEER in 2012. Also, NOAA's Coral Reef Conservation Program (CRCP) is adding a human component to the National Coral Reef Monitoring Plan (NCRMP). As part of this effort, CRCP will gather and monitor a collection of socioeconomic variables, including demographics in coral reef areas, human use of coral reef resources, as well as knowledge, attitudes, and perceptions of coral reefs and coral reef management. The overall goal of the socioeconomic monitoring component is to track relevant information regarding each jurisdiction's population, social and economic structure, the benefits of coral reefs and related habitats, the impacts of society on coral reefs, and the impacts of coral management on communities. Surveys of jurisdiction residents will take place every 4 years. The survey will have one set of questions that is the same for all locations, as well as a few select questions that are specific to the local management needs in each jurisdiction. Each year, surveys will be completed in 2-3 jurisdictions. Surveying will be initiated in the USVI in 2014-15. Scoping is happening in the USVI for determining the best approach for surveying as all jurisdictions are different from many perspectives.		

***Goal 4**. To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
<u>Objective 4.2</u>: To provide alternative livelihood opportunities for displaced fishers. **Project 1:** Give direct opportunities to fishers by employment as park rangers or interpretive officers and provide them with continued training and career development opportunities.	**Project Status:** *Completed*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** CZM **Proposed partners:** DEE, STXEEMP Office **Expected Costs:** $30,000, secured $25,000 in FY05 however funds were reprogrammed due to implementation challenges.

Description: None.		
Indicator: Hired and trained commercial fishers as interpretive rangers.		
Update: Two interpretive rangers were hired in FY05 with funding from CRCP. One of these rangers is a part-time commercial fisher. These individuals are tasked with providing park visitors with interpretive tours of the park that includes historical and cultural lessons and lessons on rules and regulations. Beyond organized educational tours, rangers are also tasked with informing rules and regulations violators of their wrong-doings relevant to park rules and ultimately what the consequences may be. Through the NOAA CRCP Education and Outreach for Enforcement project, these rangers have also received similar trainings that enforcement officers have and will continue to receive training in upcoming year specific to fisheries rules, regulations and ecology.		
Suggested Next Steps: Create opportunities for hiring more interpretive rangers and recruiting local fishers for those positions. This should be an objective within the formalized enforcement plan that encompasses a section on rangers. Having a formal plan would lay the foundation for hiring more rangers and developing a ranger system or program.		

***Goal 4**. To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.2: To provide alternative livelihood opportunities for displaced fishers. **Project 2:** Develop indirect opportunities for fishers.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** NOAA CRCP, USFWS **Lead Agency:** DFW **Proposed partners: STXEEMP Office, CZM, USFWS** **Expected Costs:** $45,000 initially; outlying years not specified
Description: Through training as fishing guides for a guided catch & release fishing program within designated areas of the STXEEMP.		
Indicator: Hired and trained commercial fishers as flying fish guides.		
Update: No funding has been secured for implementation nor has there been any activity in moving this project forward. This is due to several reasons: (1) the individual spearheading this project at DFW has since retired; (2) there has not been a feasibility study done to look at interest of fishers for this type of position; and (3) there is concern that this could potential cause increase fishing pressure as this may be presented as an additional recreational fishing opportunity (charter).		
Suggested Next Steps: A feasibility study should be done to determine if any fishers are interested in being flying fish guides in the park and what it would take to implement such a program, including financing and capacity (technical and personnel).		

***Goal 4**. To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.3: To provide alternative fishing opportunities. **Project 1:** Deploy fish aggregating devices (FADs).	**Project Status:** *Not Initiated*	**Proposed Funding Source:** NOAA CRCP, NMFS, USFWS **Lead Agency:** DFW **Proposed partners:** NOAA CRCP, NMFS, USFWS, CZM, COE **Expected Costs:** $25,000 for initial purchase and installation, no funding was specified for maintenance
Description: To redirect fishing effort towards seasonally abundant and underutilized pelagic fish such as tuna, dolphin fish and wahoo.		
Indicator: Installation and monitoring of FADS in key locations within the park.		
Update: As of 2012-2013, DFW has received a funding from the USFWS Sportfish Restoration Grant to replace FADs that were previously in place but since lost or removed and to add new ones. These FADS will be located in each island district, i.e. St. Thomas/St. John and St. Croix. A total of 50 FADs are proposed to be installed, 26 in St. Thomas/St. John and 24 in St. Croix (3 will be located outside the 3mi limit to the East of STXEEMP waters). Installation was proposed to begin in April 2012; however, DFW is currently undergoing the COE permitting process and the initiation of the installation project is currently TBD.		
Suggested Next Steps: Once the FADs are in place, and then a media campaign for outreach to the community regarding the use of the FADS as a sustainable fishing practice should be initiated. This may be done as part of the NOAA CRCP coordinated Marine Outreach and Education USVI Style's Improving Fishing Community Awareness and Compliance project.		

***Goal 4**. To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.3: To provide alternative fishing opportunities.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** NOAA CRCP, NOAA Restoration **Lead Agency:** DFW **Proposed partners:** STXEEMP Office, CZM, NOAA, COE **Expected Costs:** $50,000 initially

Project 2: Initiate habitat enhancement projects.		
Description: To supplement natural habitats, such as artificial reefs or lobster casitas.		
Indicator: Development and installation of artificial reefs and/or lobster casitas at key locations within the park.		
Update: This project has not yet been initiated due to lack of capacity and funding. The key individual at DFW that was to spearhead this project has since left.		
Suggested Next Steps: Much of the data collected on benthic habitat and fisheries resources within the park by various local and Federal agencies may provide a baseline for the development of a habitat enhancement project. For instance, in 2012, a collaborative effort to characterize the St. Croix Shelf (National Park Service, Virgin Islands Department of Planning and Natural Resources, The Nature Conservancy, University of the Virgin Islands, NOAA/NMFS Southeast Fisheries Science Center, NOAA/NOS Biogeography Branch, and University of Miami) may provide insightful information towards the need for such a program. Lack of personnel at both DFW and STXEEMP Office may have contributed to why this project never took off. Once the STXEEMP Office in particular has the necessary personnel (i.e. MPA Coordinator) on board, then this individual should work with DFW staff to determine whether baseline data is available to determine whether such a project or program is necessary and critical to the STXEEMP's mission. This effort should be done as part of the development of a habitat monitoring strategy specific to the park's goals and objectives for conserving marine and fisheries habitat and resources.		

***Goal 4**. To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.4: To supplement depleted populations of conch and lobster. **Project 1:** Initiate a stock transfer program.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** DFW **Proposed partners:** STXEEMP Office **Expected Costs:** $25,000 initially
Description: Use the assistance of commercial fishers to transfer conch and lobster (and *Diadema*?) to selected no-take areas within the STXEEMP.		
Indicator: Replenished stocks of lobster, conch and *Diadema* in STXEEMP waters.		
Update: This project has not yet been initiated due to lack of capacity and funding. The key individual at DFW that was to spearhead this project has since left.		
Suggested Next Steps: This project goes hand in hand with Objective 4.3 Project 2 and thus the recommended next steps are the same.		

***Goal 4**. To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.4: To supplement depleted populations of conch and lobster. **Project 2:** With the assistance of local fishers, initiate experimental stock enhancement projects such as the installation of low-cost lobster pueruli attractors/collectors.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** None specified. **Lead Agency:** DFW **Proposed partners:** STXEEMP Office, CZM, NOAA, COE **Expected Costs:** None specified.
Description: None.		
Indicator: Enhanced lobster stock populations.		
Update: This project has not yet been initiated due to lack of capacity and funding. The key individual at DFW that was to spearhead this project has since left.		
Suggested Next Steps: This project goes hand in hand with Objective 4.3 Project 2 and Objective 4.4 Project 1 and thus the recommended next steps are the same for the most part. However, there has been a history of poor engagement and outreach to commercial fishers in attempts to manage and conserve the STXEEMP. Thus, the commercial fishing community should be engaged to the greatest extent possible when determining the feasibility of implementing this project. Outreach should include two way transparent communication and plans made based on this dialogue.		

Goal 4. *To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.5: To empower local commercial fishers. **Project 1:** Identify funding and resources to assist commercial fishers with the formation of a collective, representative organization.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** None. **Lead Agency:** DFW **Proposed partners:** STXEEMP Office **Expected Costs:** None specified.
Description: None.		
Indicator: Established, functional fishers' association in St. Croix.		
Update: This project has not yet been initiated due to lack of capacity and funding. The key individual at DFW that was to spearhead this project has since left.		
Suggested Next Steps: This project goes hand in hand with Objective 4.3 Project 2 and Objective 4.4 Project 1 and thus the recommended next steps are the same for the most part. However, there has been a history of poor engagement and outreach to commercial fishers in attempts to manage and conserve the STXEEMP. Thus, the commercial fishing community should be engaged to the greatest extent possible when determining the feasibility of implementing this project. Outreach should include two way transparent communication and plans made based on this dialogue.		

Goal 4. *To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.6: Establish a Fisheries Liaison Officer for the STXEEMP. **Project 1:** Through public hearings, revisit several unresolved issues surrounding the proposal to have an STXEEMP Fisheries Liaison Officer.	**Project Status:** *In Progress*	**Proposed Funding Source:** None. **Lead Agency:** DFW **Proposed partners:** STXEEMP Office, DFW **Expected Costs:** None specified
Description: Determine the FLO's scope of duties and function as a special advocate for the commercial fishery.		
Indicator: Not specified.		
Update: No funds have been secured to for a STXEEMP Office specific FLO, however; NOAA CRCP funded a similar position with duties that accommodate STXEEMP's fisheries LAS goals and objectives. This individual's title is NOAA CRCP USVI Fisheries Liaison tasked with bridging communication gaps between stakeholders, local, regional and national fisheries resource managers, as well as providing capacity through technical assistance and management of projects implemented to address fisheries LASs, USVI Jurisdiction Management Priorities, NOAA CRCP Goals and Objectives and current fisheries management priorities. However, to date, there were no public scoping meetings to determine the current needs that might be addressed through the FLO's scope of duties or the current NOAA CRCP USVI Fisheries Liaison.		
Suggested Next Steps: The scope of duties for the NOAA CRCP USVI Fisheries Liaison is extensive as it has been crafted to meet Territorial and Federal fisheries management needs and priorities, thus a FLO for the STXEEMP is still a need as there is current lack of capacity in terms of personnel at the STXEEMP Office. Currently, there is no MPA Coordinator, Watershed Coordinator, Coral Reef Initiative Coordinator (this position has been recently filled) and no NOAA Coral Fellow. These are key positions to be filled now considering that they are STXEEMP management mission critical. Furthermore, added capacity to address fisheries priorities within the STXEEMP is necessary now and development of a FLO position for the STXEEMP is recommended. This position could provide support to and can be supported by the current NOAA CRCP USVI Fisheries Liaison.		

Goal 4. *To enable park managers to estimate the human dimensions of regulatory policies and to lessen the severity of impacts through the provision of alternatives.*		
Objective 4.6: Establish a Fisheries Liaison Officer for the STXEEMP. **Project 2:** Identify funding and incorporate the FLO position into the STXEEMP management framework.	**Project Status:** *In Progress*	**Proposed Funding Source:** None specified **Lead Agency:** STXEEMP Office **Proposed partners:** STXEEMP Office, DFW **Expected Costs:** None specified

Description: No		
Indicator: Secured funding and hired a FLO that would whose scope of duties would align with the STXEMP management framework.		
Update: See Update for Objective 4.6 Project 1.		
Suggested Next Steps: See Next Steps for Objective 4.6 Project 1		

Goal 5. *To provide park managers with continuous monitoring information on the status of coral reef ecosystems, fisheries resources, usage of those resources, compliance with regulatory policies, and issues of enforcement.*		
Objective 5.1: To conduct research and monitoring as required for the continuous development and refinement of management policy for the STXEEMP. **Project 1:** Establish a long-term coral reef monitoring program for the STXEEMP.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM, DFW, NOAA **Expected Costs:** $150, 000 for initial plan development and implementation; outlying year costs not specified
Description: These studies must adequately account for intraannual variation.		
Indicator: None specified.		
Update: Funding was secured for initiation of coral monitoring in the STXEEMP and secured in FY04 to the present, however, this funding was partial in amounts less than $35,000. These funds have been committed to the TCRMP for monitoring within the STXEEMP coral monitoring sites.		
Suggested Next Steps: There is ample data available to create a baseline for the development of a STXEEMP coral monitoring plan through the TCRMP and various other local and Federal research and monitoring programs. However, the coral monitoring plan should be a component within a more structured habitat monitoring plan that informs a more comprehensive eco-system based habitat monitoring program. The habitat monitoring plan should also incorporate a fisheries resource monitoring component. The overall habitat monitoring plan should be complementary to a resource use monitoring plan for STXEEMP and should be developed with extensive input from St. Croix community stakeholders through transparent means. This project coincides with STXEEMP Fisheries LAS goals 1 and 2 and thus should be address considering the objectives and projects that have been developed to address goals 1 and 2 and vice versa.		

Goal 5. *To provide park managers with continuous monitoring information on the status of coral reef ecosystems, fisheries resources, usage of those resources, compliance with regulatory policies, and issues of enforcement.*		
Objective 5.1: To conduct research and monitoring as required for the continuous development and refinement of management policy for the STXEEMP. **Project 2:** Initiate a long-term fisheries monitoring program for the STXEEMP.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM, DFW, USFWS, NOAA CRCP **Expected Costs:** $150, 000 for initial plan development and implementation; outlying year costs not specified**.**
Description: These studies must adequately account for intraannual variation.		
Indicator: None specified.		
Update: Funding was secured for initiation of fisheries monitoring, specifically lobsters, in the STXEEMP and secured in FY04 to the present, however, this funding was partial in amounts less than $30,000. These funds were used for internal STXEEMP use to monitor lobster sizes and abundance in various park zones. Within the past few years, due to lack of capacity, monitoring has ceased and the data has not been organized and interpreted for use to develop a lobster component to a fisheries monitoring plan or program for the STXEEMP.		
Suggested Next Steps: Organize and interpret previously collected data and implement new research if necessary to develop a baseline for developing a lobster component for a fisheries monitoring plan or program for the STXEEMP. See **Next Steps** for Objective 5.1 Project 1 for further recommendations.		

Goal 5. *To provide park managers with continuous monitoring information on the status of coral reef ecosystems, fisheries resources, usage of those resources, compliance with regulatory policies, and issues of enforcement.*		
<u>Objective 5.1</u>: To conduct research and monitoring as required for the continuous development and refinement of management policy for the STXEEMP. **Project 3:** Establish a program for park managers to acquire, maintain and access statistics for usage and enforcement actions within the STXEEMP.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM, DEE, DFW **Expected Costs:** Not Specified
Description: None.		
Indicator: None specified.		
Update: There has been no comprehensive and consistent effort to collecting, organizing and managing data and statistics for the STXEEMP. Existing data from various studies are either in files held by personnel within the STXEEMP office or with the agency or organization that implemented the studies and data collection.		
Suggested Next Steps: There is a critical need to hire a database manager to create a database library and organize all existing data available for STXEEMP, including ecological, socio-economic and violation incident reporting components. Funding is being sought through a proposal for the continuation of the CRCP Education and Outreach for Enforcement project in FY14 that will be allocated for development of a violation incident reporting database. Once this database is established, funding should be sought to hire the database manager to now manage and maintain the violation incident reporting and tailor the database to be more comprehensive for STXEEMP needs including ecological and socio-economic components. Eventually, this database should be accessible by other DPNR divisions to inform resource management efforts within and beyond STXEEMP.		

Goal 5. *To provide park managers with continuous monitoring information on the status of coral reef ecosystems, fisheries resources, usage of those resources, compliance with regulatory policies, and issues of enforcement.*		
<u>Objective 5.1</u>: To conduct research and monitoring as required for the continuous development and refinement of management policy for the STXEEMP. **Project 4:** Synthesize data with non-fishery impacts to reevaluate and modify park policy, as necessary.	**Project Status:** *In Progress*	**Proposed Funding Source:** None Specified **Lead Agency:** STXEEMP Office **Proposed partners:** CZM **Expected Costs:** Not Specified
Description: None.		
Indicator: None specified.		
Update: See **Update** for Objective 5.1 Project 3.		
Suggested Next Steps: See **Next Steps** for Objective 5.1 Project 3.		

Goal 6*. To assist STXEEMP managers with public outreach, education, and open dialog as it relates to the management of fisheries resources.*		
<u>Objective 6.1</u>: To facilitate communication between STXEEMP managers and the general public. **Project 1:** Develop an STXEEMP Interpretive Center with a staff of educators for dissemination of regulatory information to recreational fishers and the general public.	**Project Status:** *Not Initiated.*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** None specified**.** **Expected Costs:** $200,000 initial costs; annual costs for maintenance and personnel not specified; $50,000 was received from a NOAA Coral Management Grant in FY04.
Description: None.		

Indicator: None specified.		
Update: The funds received in FY04 were reprogrammed due to the challenge of project coordination and lack of personnel capacity.		
Suggested Next Steps: Lack of capacity and other bureaucratic issues outlined in the USVI Capacity Assessment have contributed caused this project to fall out of sight for several years. The funds received in FY04 have since been reprogrammed. However, through the reprogramming of $30,000 from the FY10 NOAA Coral Management Grant, there will be efforts made to renovate the downstairs office of the existing STXEEMP Office building at Great Pond to develop the visitor's center. If renovations are initiated by December, the visitor's center is expected to be fully renovated by summer of 2014; however, it will not open until the following year once the conceptual plan for the eco-heritage exhibit to be housed at the center is developed and implemented. Through the Marine Outreach and Education USVI Style initiative coordinated by the NOAA CRCP USVI Fisheries Liaison, funding has been sought from NOAA CRCP in FY 14 to develop a conceptual plan to create and implement and an eco-heritage exhibit in the proposed STXEEMP visitor's center.		

***Goal 6**. To assist STXEEMP managers with public outreach, education, and open dialog as it relates to the management of fisheries resources.*		
Objective 6.1: To facilitate communication between STXEEMP managers and the general public. **Project 2:** Develop education and outreach programs.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP, USFWS **Lead Agency:** STXEEMP Office **Proposed partners:** DFW, USFWS **Expected Costs:** Not specified**.**
Description: To inform and involve recreational fishers and the public in the park development process.		
Indicator: None specified.		
Update: The STXEEMP Office has not developed an overarching education and outreach program but has developed and implemented projects that address park outreach and education objectives. The STXEEMP Outreach and Education Coordinator has been working for approximately 5 years to establish a presence for the park in terms of making the public, especially the youth, about the significance of the park and its rules and regulations. Adding to this effort, educational materials have been developed relevant to zoning in the park and the significance of the park for resource management and conservation. Through NOAA CRCP funds, a van was purchased to do mobile outreach at different relevant events; this van is now called the STXEEMP Eco-van. Park rangers also assist in outreach and education through implementation of interpretive tours and making resource users within the park of the rules and regulations. Another addition to outreach and education is the establishment of the Friends of the STXEEMP non-profit organization which actively does outreach and hosts events and competitions to engage community members in conservation activities. This organization has also been essential for implementation of the STXEEMP's sustainable finance plan. The Division of Fish and Wildlife also implements outreach and education pertaining to fisheries and fisheries habitat specific to park goals. Within the past 2 years, through the Marine Outreach and Education USVI Style initiative's (MOES-VI) Don't Stop Talking Fish project that aims to build community awareness pertaining to the ecological, cultural and heritage aspects of USVI fisheries, the STXEEMP Office has had the opportunity to implement outreach at fisher workshops and the STXEEMP Office Great Pond location will be the site for the DSTF cultural event which will be held on June 28, 2014.		
Suggested Next Steps: Though there is a great deal of outreach done for the public through the STXEEMP Office and other local and Federal resource management agencies, the development of an outreach and education strategy and ultimately a program is necessary for sustainability and consistency of park outreach and education efforts. Through NOAA CRCP FY13 funds, a USVI Comprehensive Communications, Outreach and Education Strategic Plan for 2015-2020 which might be used as a template for development of a STXEEMP specific plan and program, especially for engaging fishers in workshops and public meetings regarding park management.		

***Goal 6**. To assist STXEEMP managers with public outreach, education, and open dialog as it relates to the management of fisheries resources.*		
Objective 6.2: To facilitate communication between resource managers and fishers. **Project 1:** Develop a series of educational workshops.	**Project Status:** *Not initiated*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** DFW **Proposed partners:** STXEEMP Office, CZM **Expected Costs:** $22,400; in FY05 the total amount was awarded as part of the NOAA Coral Management Grant, this money was reprogrammed. In FY 09, $32,400 was allocated to fund workshops through the NOAA Coral Management Grant for which funds have been reprogrammed again.
Description: To inform commercial fishers about fishing regulations and current issues of marine resource management.		
Indicator: None specified.		
Update: This project has not yet been initiated due to lack of capacity and funding. The key individual at DFW that was to spearhead this project has since left. Funds were reprogrammed and funding for these workshops have not been applied for and received since.		

However, the MOES-VI Improving Fishing Community Awareness and Compliance annual commercial fisher workshops have supplemented this gap. Topics for the annual workshops change on an annual basis, however; the consistent theme is fisheries rules, regulations and related topics. Some of the topics included during the past two years were (1) the significance of timely and accurate catch reporting and the use of this data for fisheries management, specifically ACLs, (2) zoning within the STXEEMP, (3) ESA proposed listings, to name a few. This is an annual workshop, so there is always the opportunity for the STXEEMP Office to participate and do outreach pertaining to park resource management goals and objectives.
Suggested Next Steps: Continued participation in the MOES-VI steering committee, events and activities, particularly the annual fisher workshops as part of the Improving Fishing Community Awareness and Compliance project. Outline a strategy for engaging commercial fishers as part of a STXEEMP outreach and education plan.

Goal 6*. To assist STXEEMP managers with public outreach, education, and open dialog as it relates to the management of fisheries resources.*		
Objective 6.2: To facilitate communication between resource managers and fishers. **Project 2:** Prepare educational materials.	**Project Status:** *Completed*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** DFW, NMFS **Expected Costs:** $20,000 initially
Description: Maps of closure areas, summary handouts of fishing regulations, for on-site distribution by park rangers and enforcement officers.		
Indicator: None specified.		
Update: This project has not been funded but has been occurring incidentally through funds from related outreach projects. Small 4X4 laminated color maps of STXEEMP zones with the zoning rules and regulations on the back have been developed and are handed out during outreach events and opportunities such as interpretive ranger tours. Several paper brochures have been developed based on park rules and regulations including fisheries specific rules and regulations established by local and Federal resource management agencies.		
Suggested Next Steps: There are many educational materials that exist pertaining to fisheries rules, regulations, management and conservation prepared by relevant government agencies (e.g. DFW, CFMC, NMFS, NOAA CRCP, USFWS, etc…) as well as by conservation organizations (TNC, SEA, VI RCD, VIMAS, PR Sea Grant, etc…) that may be used in park outreach and education efforts. For example, a waterproof brochure was prepared for local and federal rules and regulations in the USVI which doubles as a measurement tool and fish identification guide for 25 of the most commercially valuable fish species; this was done through MOES-VI. Currently, there are new updated materials being produced by DFW, CFMC and NMFS Sustainable Fisheries Division that would be useful in park outreach and education efforts. The MOES-VI Comprehensive Communications, Outreach and Education Strategic Plan for 2015-2020 has been developed by AECOM (2014) which is comprised of a gap analysis component which has an inventory of past and present outreach and education projects and programs implemented in the USVI and where the gaps are in reaching specific target groups on specific topics. This component and the overall plan would be useful in the development of a STXEEMP specific outreach and education strategy and program.		

Goal 7. *To gather information to determine the effectiveness of the STXEEMP in the conservation of coral reef ecosystems and the enhancement of fisheries resources.*		
Objective 7.1: To initiate research projects that will evaluate the effectiveness of the STXEEMP. **Project 1:** Compare fisheries resources (lobster, conch, select reef fish).	**Project Status:** *Not Initiated*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** DFW **Proposed partners:** STXEEMP Office, CZM, NOAA **Expected Costs:** Not specified.
Description: Protected areas vs. unprotected areas.		
Indicator: None specified.		
Update: This study has not yet been initiated however baseline information to inform this study has been collected through various research efforts by local and Federal managers, as well as community organizations (i.e. those studies iterated under Goals 1 and 5). Over the past year and currently, NOAA CRCP has been conducting *"Are MPAs working in the USVI? Comparisons of ecological performance for fully, partially, and unprotected ecosystems"* project, which is in Year 2 of implementation. This project will work with local partners to integrate and analyze a decade of monitoring data (e.g. TCRMP and NOAA Biogeography data) for fish and benthic habitats to determine trends in biomass of fished species, coral cover, diversity, and other indicators of MPA performance. Enforcement history and violations will be summarized to understand protection efforts and impacts from fishing. MPA report cards will be produced to help managers communicate the results to the public. Though the STXEEMP is not one of the sites that will be assessed through this study, nonetheless, the information collected and the MPA score card would be useful for determining the effectiveness of the STXEEMP with comparisons to closed areas outside of the park.		
Suggested Next Steps: Prior to establishing a study like this for STXEEMP, the first step would be to compile all existing park data		

into a database, analysis of the data and determination of baseline information. This should be done for all park data including ecological and socio-economic. Then using the MPA score card and data for other sites, comparisons can be made and effectiveness can be determined. This information might then be used to develop a habitat and resource monitoring plan and program. The next step would be to add a socio-economic component to the MPA score card specific to STXEEMP allowing for integration of the human dimensions of resource management in the STXEEMP mission; this could potentially provide managers with information that would better inform amendments to park zoning, rules and regulations which would in turn create more buy-in from stakeholders. Use of the MPA score card, development of a socio-economic component and establishment of a habitat and resource monitoring plan and program as well as a resource use monitoring plan would be critical for setting a foundation for adaptive eco-system based management of the STXEEMP.

Goal 7. *To gather information to determine the effectiveness of the STXEEMP in the conservation of coral reef ecosystems and the enhancement of fisheries resources.*		
Objective 7.1: To initiate research projects that will evaluate the effectiveness of the STXEEMP. **Project 2:** Evaluate annual coral reef monitoring data.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** STXEEMP Office **Proposed partners:** CZM, DFW, NOAA **Expected Costs:** Not specified
Description: Assess changes in coral reef communities following implementation of the STXEEMP.		
Indicator: None specified.		
Update: This project has been not been initiated directly for STXEEMP entirely however, this is in the process of occurring incidentally through various local and federal resource management (e.g. TCRMP, NOAA Biogeography and NOAA CRCP) and community organization efforts (e.g. TNC, SEA) as specified under Goals 1 and 5. Thus funding received for TCRMP implementation contributes to collection of STXEEMP coral monitoring data and upon requests a summary of TCRMP park data can be made available. Also, through FY 09 funding from the NOAA Coral Management Grant, $5033 was secured to initiate a baseline study of Acropora within the STXEEMP in addition to funding secured from the NOAA ESA Section 6 program to develop a more comprehensive research program which is being led by UVI; which is an on-going component of the TCRMP. Some of these funds were used for training of the former Territorial Coral Reef Initiative Coordinator on ESA issues and Acropora research basics.		
Suggested Next Steps: The next step would be to organize all available information and summary reports from TCRMP and NOAA into a database then development of a baseline to establish a habitat and resource monitoring plan with a coral component. This would be done was a database manager and analyst is hired who would be guided by the head researcher at the STXEEMP, the MPA Coordinator which is currently a vacant position.		

Goal 7. *To gather information to determine the effectiveness of the STXEEMP in the conservation of coral reef ecosystems and the enhancement of fisheries resources.*		
Objective 7.1: To initiate research projects that will evaluate the effectiveness of the STXEEMP. **Project 3:** Conduct recruitment studies.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** None specified **Lead Agency:** DFW **Proposed partners:** STXEEMP Office, CZM **Expected Costs:** Not specified
Description: To determine if protected stocks in the park act to seed habitats outside the park boundaries.		
Indicator: None specified.		
Update: This project has not yet been initiated due to lack of capacity and funding. The key individual at DFW that was to spearhead this project has since left.		
Suggested Next Steps: Develop a baseline of information to inform a large scale recruitment study that would be used to inform development of the habitat and resource monitoring plan and program. This project is complementary to previous projects in Goals 1 and 5.		

Goal 7. *To gather information to determine the effectiveness of the STXEEMP in the conservation of coral reef ecosystems and the enhancement of fisheries resources.*		
Objective 7.2: To insure that results from previous studies are available.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** Not specified **Lead Agency:** None specified **Proposed partners:** None specified **Expected Costs:** Not specified

Project 1: Assist with ongoing efforts to create a centralized repository for publications.		
Description: Relating to the natural resources of St. Croix and the USVI.		
Indicator: None specified.		
Update: Many of the resource publications pertaining to research within STXEEMP, are either stored in paper files, on personnel hard drives or are still in the possession of researchers.		
Suggested Next Steps: This project is complementary to Objective 5.1 Projects 1-3. Beyond just establishment of a database for data, a component of the database should be a library containing all reports and publications organized by research themes (e.g. ecological, socio-economic, etc…).		

Goal 8. *To strengthen local Fishery Advisory Committees (FACs) so that they can address those fisheries issues that directly impact STXEEMP marine resources, but also extends beyond park boundaries (either as island-wide fisheries issues or as territory-wide concerns).*		
Objective 8.1: To build capacity of local Fishery Advisory Committees (FACs) to facilitate direct communication between fishers, marine resource managers, STXEEMP managers, and user groups on proposed fisheries restrictions. **Project 1:** Procure funding for local FACs.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** DFW **Proposed partners:** STXEEMP Office **Expected Costs:** $80,000
Description: To expand their effectiveness and to support the participation of federal moderators in the process.		
Indicator: None specified.		
Update: FACs have been developed and are functioning in both island districts (St. Croix and St.Thomas/St.John) to provide the Commissioner of DPNR with recommendations for sustainable fisheries management in the USVI. FAC meetings in St. Croix are held every second Wednesday of each month usually. The Chair of the St. Croix FAC is currently Edward Schuster which is also the President of the SCCFA and an active member of the CFMC Advisory Panel. The St. Croix FAC is also made up of personnel from DFW, and representatives from academia, and commercial and recreational sectors. Currently, the FACs are not provided funding by any means except from CFMC for reserving the room in which they meet.		
Suggested Next Steps: Develop a proposal to secure funding for professional development of FAC members, travel for all FAC members to fisheries management and conservation meetings and conferences internationally and travel for federal and regional partners to attend FAC meetings in advisory roles especially when rules and regulations are being proposed by CFMC and NMFS.		

Goal 8. *To strengthen local Fishery Advisory Committees (FACs) so that they can address those fisheries issues that directly impact STXEEMP marine resources, but also extends beyond park boundaries (either as island-wide fisheries issues or as territory-wide concerns).*		
Objective 8.2: To revise the territorial fishing license system. **Project 1:** Revise territorial licensing regulations for commercial and recreational fishers.	**Project Status:** *In Progress*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** DPNR Commissioner, DFW **Proposed partners:** STXEEMP Office, FAC **Expected Costs:** $20,000; $7500 was secured in FY05 funds from the NOAA Coral Management Grant.
Description: None.		
Indicator: None specified.		
Update: The funding secured from the NOAA Coral Management Grant was used to contract MRAG Americas to conduct a feasibility study to compile the *Decisions of the Joint Fishery Advisory Committee for USVI Recreational Regulations* (Trumble, 2010) document. On November 6-7 at Frenchman's Reef in St. Thomas, a joint meeting between St. Thomas and St. Croix FACs was had to determine the feasibility for revising territorial licensing regulations for recreational fishing and development of an official recreational data collection and licensing program (s). Majority of FAC members were in support of this and gave specific		

recommendations for revisions to rules and regulations and requirements for development of a program. Since this was done, no progress has been made in making changes to recreational regulations. The year this was initiated it was a political election year and several politicians ran with this in a negative direction which stirred up a lot of controversy among the community. As a result, the objective was tabled. In terms of commercial fishing regulation regulations, the FAC has been working actively to implement compatibility of territorial rules and regulations through recommendations to various Commissioners over the past few years. Various recreational based research and data collection projects are in progress over the next year (e.g. NOAA CRCP socio-economic and creel surveys of shore-based fishers and the MRIP program). This has not been completely effective in that the basis for rules and regulations in the USVI, Act 3330 of the VI Code must be amended to establish a basis for compatibility. A former DFW employee has been working on the revisions of Act 3330 and, through the FAC, has made recommendations for acceptance of this revision to DPNR Commissioners. To date, no progress has been made for moving this revision forward. More recently, in preparation for the establishment of island-based fisheries management plans for each island district, the Council has made efforts to make the Federal fishing season in the EEZ compatible with that of the territorial fishing season.

Suggested Next Steps: In terms of recreational the recreational aspect, once base-line data is collected through the various studies being initiated this year, coupled with updates to the FAC recommendations, updated revisions to Act 3330 may be made and then a program for recreational data collection and licensing might be established. This would give grounds for revision and complete implementation of recreational fishing regulations within the STXEEMP and for the development and implementation of a recreational fishing permit within the park. In regards to revisions for the commercial fish regulations, next step would be revisions to Act 3330 and compatibility of territorial and Federal rules and regulations (where and when necessary). Now is the time to implement both recreational and commercial based tasks with the movement to island based management plans for each island district within the USVI regardless of the political year.

Goal 9. *To manage coastal wetland areas so as to maintain their capacity to filter upland-derived sediments, to prevent overharvesting of the organisms that utilize these habitats, and to preserve the integrity of these habitats as nursery areas for numerous marine organisms.*

Objective 9.1: To develop a management program for coastal wetlands within the STXEEMP. **Project 1:** Host workshop to identify a lead agency and establish partnerships for wetlands management.	**Project Status:** *In Progress*	**Proposed Funding Source:** Not specified **Lead Agency:** None specified **Proposed partners:** None specified **Expected Costs:** Not specified
Description: None.		
Indicator: None specified.		
Update: *Not Initiated.* This project has not been initiated due to lack of capacity and funding. Currently, there is no Watershed Coordinator within the STXEEMP Office to coordinate or implement wetland projects however; funding is being sought through NOAA CRCP to fill this position in FY14. The Watershed Coordinator could be responsible for coordinating workshops among relevant agencies and stakeholders to discuss the issue of wetland management within the STXEEMP.		
Suggested Next Steps: Hire a Watershed Coordinator.		

Goal 9. *To manage coastal wetland areas so as to maintain their capacity to filter upland-derived sediments, to prevent overharvesting of the organisms that utilize these habitats, and to preserve the integrity of these habitats as nursery areas for numerous marine organisms.*

Objective 9.1: To develop a management program for coastal wetlands within the STXEEMP. **Project 2:** Secure funding for wetlands management.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** Not specified **Lead Agency:** None specified **Proposed partners:** None specified **Expected Costs:** Not specified
Description: None.		
Indicator: None specified.		
Update: This project has not been initiated due to lack of capacity and funding. Currently, there is no Watershed Coordinator within the STXEEMP Office to coordinate or implement wetland projects however; funding is being sought through NOAA CRCP to fill this position in FY14. The Watershed Coordinator could be responsible for securing funding for the development of a wetlands management strategy as part of an overarching watershed management program for STXEEMP.		
Suggested Next Steps: Hire a Watershed Coordinator a define scope of duties to include development of a wetlands management strategy as part of an overarching watershed management program for STXEEMP and seeking funds through grant opportunities for		

implementation.

Goal 9. *To manage coastal wetland areas so as to maintain their capacity to filter upland-derived sediments, to prevent overharvesting of the organisms that utilize these habitats, and to preserve the integrity of these habitats as nursery areas for numerous marine organisms.*		
Objective 9.1: To develop a management program for coastal wetlands within the STXEEMP. **Project 3:** Initiate wetlands restoration and management of Great Pond.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** Not specified **Lead Agency:** None specified **Proposed partners:** None specified **Expected Costs:** Not specified
Description: In the first year, and in subsequent years to target additional wetlands (Coakley Bay Salt Pond, Southgate Salt Pond, Altona Lagoon, and Mount Fancy Salt Pond).		
Indicator: None specified.		
Update: To date, this project has not been initiated due to lack of capacity and funding. Currently, there is no Watershed Coordinator within the STXEEMP Office to coordinate or implement wetland projects however; funding is being sought through NOAA CRCP to fill this position in FY14.		
Suggested Next Steps: See Next Steps for Objective 9.1 Project 2. Also, once the Watershed Coordinator is on board and the wetlands management component to the overarching watershed management plan is completed, with regards to wetland restoration specifically, the next step would be to develop and implement restoration feasibility studies in areas that have historically been wetland habitats for fisheries and wildlife resources (e.g. Great Pond).		

Goal 10. *To evaluate the impacts of marine debris on coral reef ecosystems of the STXEEMP.*		
Objective 10.1: To quantify the amount of marine debris (garbage, cargo nets, tar balls, etc.) washed ashore and take steps to remove it. **Project 1:** Utilize Park Rangers to gather data on marine debris.	**Project Status:** *Not Initiated*	**Proposed Funding Source:** Not specified **Lead Agency:** None specified **Proposed partners:** None specified **Expected Costs:** Not specified
Description: None.		
Indicator: None specified.		
Update: Currently, a park ranger's scope of duties do not outline clean-up of marine debris. This poses and issue when it comes to willingness to perform this task outside of a ranger's scope of work. Thus currently, most marine debris is left on shore in gathered heaps but not removed.		
Suggested Next Steps: Revise park rangers' scope of work to include removal of marine debris and terrestrial trash removal within STXEEMP. Develop a standard operating protocol for removal, storage and disposal of marine debris within the park; this may be a duty of the MPA Coordinator.		

Goal 10. *To evaluate the impacts of marine debris on coral reef ecosystems of the STXEEMP.*		
Objective 10.1: To quantify the amount of marine debris (garbage, cargo nets, tar balls, etc.) washed ashore and take steps to remove it. **Project 2:** Utilize volunteers to assist with beach clean-ups.	**Project Status:** *In Progress*	**Proposed Funding Source:** Not specified **Lead Agency:** None specified **Proposed partners:** None specified **Expected Costs:** Not specified
Description: None.		
Indicator: None specified.		
Update: This project has not been initiated as a direct attempt by the STXEEMP office. However, in past years, beach clean-up efforts throughout the entire island have been coordinated and implemented by various agencies and community organizations, e.g. DPNR, Friends of STXEEMP, SEA, VIMAS and public and private school groups, etc….		
Suggested Next Steps: Once the MPA Coordinator has developed the SOP for marine debris and terrestrial trash removal, park rangers and the STXEEMP Outreach and Education Coordinator can work with the other agencies and organizations to implement the SOP which would outline scheduled clean-ups on rotation, incorporating STXEEMP beaches and other recreational areas.		

3.2 St. Thomas East End Reserves Fishing LAS

The St. Thomas East End Reserves (STEER) is a territorial marine protected area which encompasses several existing protected areas (Cas Cay/Mangrove Lagoon, St. James, and Compass Point Marine Reserves & Wildlife Sanctuaries) into one comprehensive management unit. STEER is the newest protected area throughout the marine and coastal environment of the USVI. STEER and the St. Croix East End Marine Park (STXEEMP) are managed by the USVI Territorial form the beginnings of a territory-wide system of Marine Protected Areas (MPAs).

In early 2008, public outcry over a permitting issue off of Great St. James Island made it clear that St. Thomas East End Reserves (STEER) was need of a comprehensive Management Plan (STEER management plan, 2011). In April of that year, a Core Planning Team brought together dynamic minds from academia, federal and state agencies, community and private conservation organizations to work through the initial phases of The Nature Conservancy's Conservation Action Planning Process, referred to as CAP. In 2011, the first STEER management plan was completed by The Nature Conservancy in partnership with local and Federal management agencies and stakeholders, including the entities and individuals involved in the STEER Core Group.

The CAP process used for planning and development of the 2011 STEER management plan was quite different from the process implemented for developing the STXEEMP management plan and so the structure of goals, objectives and action steps differ quite significantly from the project list structure of the STXEEMP plan. The primary components of the STEER management plan included:

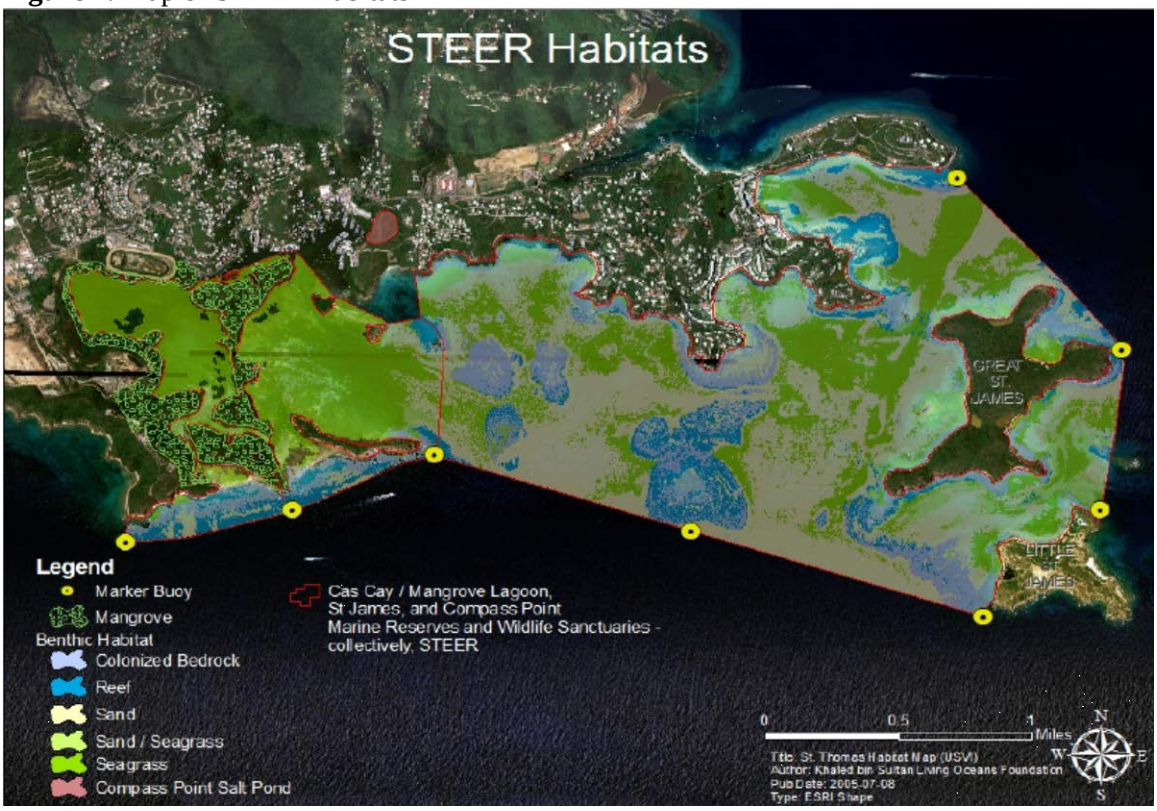
- An outline of STRATEGIES AND ACTION STEPS aimed to abate threats to these resources or to restore the targeted resources to acceptable and functional levels.
- A MONITORING PLAN to accompany the management strategies to inform managers, researchers, funding sources, and Virgin Islanders of the effectiveness of activities to the benefit of the resources.
- A SUSTAINABLE FINANCE PLAN that identifies the financial need and resources for the management and operation of STEER.
- A ZONE AND MOORING PLAN which clearly delineates the designated allowed maritime, recreational and commercial uses with corresponding regulations, and a mooring and anchoring plan.
- Relevant BACKGROUND INFORMATION necessary for guiding the management of STEER including legislative structure, current uses and status of the resources, studies, and involved parties.

Just as the decision to adopt the STXEEMP management plans projects as LAS project was made, the same decision was made for STEER; however, the actions steps listed for STEER were not as well thought out as the projects for STXEEMP. Specifically, STXEEMP projects were categories under distinct fisheries goals and objectives, whereas STEER several action steps were categorized under specific goals and objectives. Thus, in the following assessment of STEER 'LAS projects', decisions on which projects were associated with conservation targets that included *fisheries resources* (Figure 3), served as the premise by which action steps were chosen and evaluated. Existing STEER habitats are defined in Figure 4.

Figure 3. STEER Conservation Targets

- MANGROVES
- SEAGRASS BEDS
- COMPASS POINT SALT POND
- SEA AND SHORE BIRDS
- CORAL REEF COMMUNITIES
- NURSERY AND FISHERIES RESOURCES
- COMPATIBLE AND SUSTAINABLE USE AND ENJOYMENT

Figure 4. Map of STEER Habitats



Goal 1. To reduce Land-Based Sources of Pollution.		
Objective 1.1 : To reduce sediment and nutrient inputs from land-based sources of pollution on the marine environment by 15% by 2015, and reduce to within acceptable limits (Total Maximum Daily Load) by 2020. **Strategy 1.1.B:** Watershed and Stormwater Management: Partner with public and private sector (marinas, industrial shops, VIWMA, DPNR, federal agencies) to reduce non-point source pollution sources.	**Project 1:** Partner with NOAA's Coral Reef Conservation Program and the National Centers for Coastal Ocean Science to develop a baseline assessment of chemical contaminants and bioeffects present in Mangrove Lagoon and STEER (metals, nutrients, bacteria, hydrocarbons, etc.) **Project Status:** *Completed*	**Proposed Funding Source:** None specified. **Lead Agency:** NOAA (Tony Pait) **Proposed partners:** STEER, TNC, DEP **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources
Description: Multi agencies and community members engaged. Specific contaminants and bioeffects on biota determined. Non-Point Source and Point Source identified recommendations for BMPs. Baseline levels relative to water quality standards and published impacts on target species (seagrass, invertebrates, juvenile fish, bait fish); targeted to be initiated by 2011.		
Indicator: Final report and manuscripts on contaminant levels and bioeffects in STEER. Will include a quantification of sediment contaminants present, and the toxicity of those sediments. Will also include an assessment of water soluble contaminants.		
Update: NOAA Contaminants project approved for funding (Tony Pait, Ian Hartwell, Andrew Mason, Chris Jeffrey, and Simon Pittman). Final reports were produced in 2013 and 2014 and the 2014 report may accessed at the following link: http://docs.lib.noaa.gov/noaa_documents/NOS/NCCOS/TM_NOS_NCCOS/nos_nccos_177.pdf A journal publication was also produced: Pait et al., 2014. An assessment of chemical contaminants in sediments from the St. Thomas East End Reserves, St. Thomas, USVI. Environ Monit Assess. 2014 Aug; 186(8):4793-806.		
Suggested Next Steps: Remediation and restoration feasibility studies.		

Goal 1. To reduce Land-Based Sources of Pollution.		
Objective 1.1 : To reduce sediment and nutrient inputs from land-based sources of pollution on the marine environment by 15% by 2015, and reduce to within acceptable limits (Total Maximum Daily Load) by 2020. **Strategy 1.1.B:** Watershed and Stormwater Management: Partner with public and private sector (marinas, industrial shops, VIWMA, DPNR, federal agencies) to reduce non-point source pollution sources.	**Project 2:** Create a long-term sampling and monitoring protocol that will be representative of all the possible land-based sediment pollution impacts, must include parameters like chl-*a* **Project Status:** *Not initiated.*	**Proposed Funding Source:** NOAA CRCP **Lead Agency:** NOAA (Tony Pait) **Proposed partners:** STEER, TNC, DEP, EPA **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources
Description: A cost-effective monitoring program developed to track changes in pollutant concentrations annually to semi-annually; initiated by 2011.		
Indicator: Report is created and used in the Territory.		
Update: NOAA Contaminants project approved for funding (Tony Pait, Ian Hartwell, Andrew Mason, Chris Jeffrey, and Simon Pittman). Initially, there may not be enough capacity for this monitoring program which may require identifying collaborators and/or external funding sources. Identify sources of contaminants.		
Suggested Next Steps: Investigate the potential for the utilization service of the new University of the Virgin Islands testing facilities to conduct and analyze long-term monitoring with financial support.		

Goal 1. *To reduce Land-Based Sources of Pollution.*		
Objective 1.1 : To reduce sediment and nutrient inputs from land-based sources of pollution on the marine environment by 15% by 2015, and reduce to within acceptable limits (Total Maximum Daily Load) by 2020. **Strategy 1.1.B:** Watershed and Stormwater Management: Partner with public and private sector (marinas, industrial shops, VIWMA, DPNR, federal agencies) to reduce non-point source pollution sources.	**Project 3:** Conduct a Watershed Study: Partner with NOAA Restoration Center, CWP to do watershed and gut assessment; identify areas where BMPs could be implemented to reduce runoff **Project Status:** *Completed.*	**Proposed Funding Source: NOAA CRCP** **Lead Agency:** NOAA Rest Center, Center for Watershed Studies **Proposed partners:** STEER, TNC, DEP, EPA **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources
Description: Recommend BMPs, zoning scheme, identify programs. Identify, through studies, a green zone (area adjacent that affects the watershed,); initiated by 2011. Can/should we dredge to offset sedimentation? Research sediment trapping options. Limit bare dirt in watershed. Find effective construction runoff containment. Analyze septic systems and soil percolation tests along watershed, share results of inspection, and retrofit.		
Indicator: Potential point sources of pollution identified from baseline studies. Define water quality objectives (the TBD above) from this baseline study and analysis.		
Update: Report produced and may be accessed at the following link: http://www.horsleywitten.com/STEERwatersheds/pdf/WatershedManagementPlan/1305031_STEERWatershedPlan.pdf.		
Suggested Next Steps: Identification of practical recommendations within WSMP to move forward with implementation which has been initiated in partnership with STEER, TNC, DEP, EPA, NOAA, DPNR TNC, VIPW, Horsley Whitten. Through a holdback from the NOAA CRCP FY13-15 Cooperative Agreement totaling $56,000.		

Goal 1. *To reduce Land-Based Sources of Pollution.*		
Objective 1.2 : To reduce the amount of contaminants entering into the Inner Mangrove Lagoon by 15% by 2015, and restore water clarity to a minimum of 2 meters depth by 2020. **Strategy 1.2B:** Improve water circulation/flow within Inner Mangrove Lagoon.	**Project 1:** Obtain report from Fish and Wildlife that contains the history of the second false entrance and historical water exchange rate. **Project Status:** *Not initiated.*	**Proposed Funding Source:** USFWS Sport Fish Restoration **Lead Agency:** DFW **Proposed partners:** None Specified. **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources
Description: Determine history of success, lessons learned		
Indicator: Summary document completed by 2011.		
Update: Preliminary feasibility summary was developed by a former DFW employee however this has not gone any further.		
Suggested Next Steps: Re-vitalize the discussion with DFW about pursuing this project.		

Goal 1. *To reduce Land-Based Sources of Pollution.*		
Objective 1.2 : To reduce the amount of contaminants entering into the Inner Mangrove Lagoon by 15% by 2015, and restore water clarity to a minimum of 2 meters depth by 2020. **Strategy 1.2B:** Improve water circulation/flow within Inner Mangrove Lagoon.	**Project 7:** Continual monitoring: Effects on water quality and habitat loss **Project Status:** *In-progress.*	**Proposed Funding Source:** USFWS Sport Fish Restoration **Lead Agency:** STEER Core Group **Proposed partners:** DFW **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources

Description: Monitor habitat and water quality over time, specifically in regards to landfill closure and the new Waste to Energy Plant. Keep abreast of pending development; May increase habitat or fish.
Indicator: Determine long-term sustainability of actions by 2015. DFW (F16- sport fish restoration) - has been done before. Refer to Projects 1-6.
Update: Refer to the Virgin Islands Water Quality Assessment Report 2012, which contains historical data as well: **http://ofmpub.epa.gov/waters10/attains_state.control?p_state=VI**
Suggested Next Steps: Expand the geographical range for data collection within STEER in order to gain a more complete picture of total water quality throughout STEER.

Goal 1. *To reduce Land-Based Sources of Pollution.*		
Objective 1.3 : Reduce sediment input into Compass Point Pond by _TBD_% by 2015, increase resilience to climate change, and restore balance in hydrology by 2020. **Strategy 1.3.A:** Restoration of Compass Point Salt Pond.	**Project 1:** Determine current sediment input and acceptable hydrologic ratios (salt, fresh, sediments) **Project Status:** *In progress.*	**Proposed Funding Source:** None Specified. **Lead Agency:** DFW **Proposed partners:** Visiting Researchers **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources
Description: Results indicate that actions need to be taken.		
Indicator: None specified.		
Update: Pilot study done in 2006: http://www.uvi.edu/files/documents/Research_and_Public_Service/WRRI/evaluating_sediment.pdf; Refer to projects 2-4.		
Suggested Next Steps: Integrate the information from the STEER WSMP and this pilot study to design a monitoring plan to characterize the hydrologic ratios and sediment inputs. Initiate an extensive education program within communities surrounding major inputs.		

Goal 1. *To reduce Land-Based Sources of Pollution.*		
Objective 1.3 : Reduce sediment input into Compass Point Pond by _TBD_% by 2015, increase resilience to climate change, and restore balance in hydrology by 2020. **Strategy 1.3.A:** Restoration of Compass Point Salt Pond.	**Project 5:** Expand the mangrove fringe—address climate change models from Strategy Plan **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** None specified. **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources
Description: Compass Point Salt Pond in sustained state of renewal		
Indicator: Buffer expanded to maximum limits by 2013.		
Update: Not initiated. This project is unclear in terms of its intent.		
Suggested Next Steps: Re-visit with the STEER Core Group.		

Goal 1. *To reduce Land-Based Sources of Pollution.*		
Objective 1.3 : Reduce sediment input into Compass Point Pond by _TBD_% by 2015, increase resilience to climate change, and restore balance in hydrology by 2020. **Strategy 1.3.A:** Restoration of Compass Point Salt Pond.	**Project 6:** Remove trash, remove invasive species, replant wetland vegetation **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** DFW, UVI, Volunteers **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Coral, Birds, Fishery Resources

Description: Community engaged, health of salt pond maintained.
Indicator: Annual reports.
Update: Clean-ups may occur along the shorelines. It is unknown whether invasive species are being removed and wetland vegetation replanted. This project is unclear in terms of its intent.
Suggested Next Steps: Re-visit with the STEER Core Group.

Further elaborating upon the projects associated with Goal 1, STEER has been identified as a priority area for coral reef conservation by the coral reef management community of the USVI. The largest remaining stand of mangrove habitat is found in this reserve along with important sea grass and coral reef habitat. Land based pollutants from poor development practices as well as industrial activity occurring in the watershed area adjacent to STEER are affecting these resources found in the marine reserve. Many partners in the USVI have come together and worked to develop a management plan for the marine reserve. No planning has occurred for the activities in the adjacent terrestrial watershed which greatly impact the coral reef resources. This watershed plan would complement the STEER management plan and propose a series of actions that can be taken now to address known sources of land based pollution. Watershed management plans have been developed or are in development for three of the four geographic areas identified as priority sites for coral reef management in the USVI. STEER is the only priority site for which a watershed management plan does not exist. The CRCP provided funding for the development of community supported comprehensive watershed plans in Coral Bay, St. John (2006) and the East End Marine Park, St. Croix (2010), two of the priority sites. The completion of the Coral Bay plan, which is endorsed by USVI DPNR as well as local residents, has helped the community secure funding from various sources for the implementation of numerous watershed plan priority projects and has drawn interest from the academic community to target resources and funding to this area as well. The watershed plan in Coral Bay was completed by the Center for Watershed Protection and the plan for the East End Marine Park will be completed by the Horsley Whitten Group – both entities have a solid foundation of extensive experience and knowledge of issues and conditions in tropical island locations, the USVI, and the wider Caribbean. Horsley Whitten was selected to develop a plan for STEER. The plan was produced in 2012 and costs were $75,000 which was secured through the internal CRCP RFP process.

Goal 2. *To reduce impacts of Climate Change.*		
Objective 2.1 : By 2020, create a Climate Change Adaptation Strategy Plan for Salt Ponds, Corals, Seagrasses, Mangroves, Birds, and Fisheries Resources for STEER. **Strategy 2.1:** Create a Climate Change Adaptation Strategy Plan.	**Project 2:** Conduct a resilience survey- corals, seagrass, mangroves **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** NOAA Coral Watch **Proposed partners:** IUCN, UVI, CZM **Expected Costs:** Not specified. **Targets:** Salt Pond, Corals, Seagrass, Mangroves, Fishery Resources, Birds
Description: Resilience of coral reefs, seagrass, mangroves in STEER assessed		
Indicator: Report presented to managers		
Update: This project is unclear in terms of its intent. TCRMP and NCRMP may have collected baseline data to inform this project though the goals of this data collection were not specified to meet the objectives of this particular project.		
Suggested Next Steps: Analyze existing data, identify gaps and develop and initiate projects to fill data gaps. TNC and Digital Coasts have updated their sea level rise viewers which can aid project development.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1A:** Regulate development in STEER and nearby habitats.	**Project 1:** Determine current enforcement capacity **Project Status:** *In Progress*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** None specified. **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Identify existing regulations.		
Indicator: Summary report developed by 2010.		
Update: There are general VI codes that govern the STEER area. There are no rules and regulations specific to STEER. Current enforcement capacity is low due to lack of officers and limited resources. See USVI Coral Reef Management Capacity Assessment for more details. There is currently an ongoing CRCP project, entitled "Education and Outreach for USVI Enforcement Officers" aimed to increase technical capacity of DEE officers. Specific to coral reef policy and ability to enforce existing regulations under the VI code, this CRCP project, assessed policy gaps and gaps in officer incident reporting throughout the territory.		
Suggested Next Steps: There is a CRCP proposal for FY15 to develop a strategic plan for DEE enforcement. This can inform the levels of capacity are needed for enforcement to function optimally. Also, DPNR is proposing a project under the NOAA CRCP FY13-15 Cooperative Agreement for a legal fellow to provided DEE with legal review of its processes. This project is not specific to STEER but address enforcement capacity issues throughout the Territory.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1A:** Regulate development in STEER and nearby habitats.	**Project 2:** Educate existing enforcement **Project Status:** *In progress.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** None specified. **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Enforcement updated on STEER issues and initiated by 2012.		
Indicator: DEE staff trained.		
Update: See Project 1 under Objective 3.1 A. The CRCP project has also provided workshops for enforcement officers on ESA and other regulated species. Officers have also done exchanges with Florida enforcement to gain experience more experience in handing incidents and cases (June 2014).		
Suggested Next Steps: See Project 1 under Objective 3.1 A.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1A:** Regulate development in STEER and nearby habitats.	**Project 3:** Enforce existing regulations **Project Status:** *Not Initiated*.	**Proposed Funding Source:** None specified. **Lead Agency:** DEE **Proposed partners:** **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Development is compatible with STEER and initiated by 2009.		
Indicator: Increase in number of regulations enforced.		
Update: Several leadership and personnel changes in DEE, particularly in St. Thomas, has led to very little or no enforcement within STEER.		
Suggested Next Steps: Develop and implement an enforcement plan to include STEER areas and objectives for enforcement.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1A:** Regulate development in STEER and nearby habitats.	**Project 4:** Community education **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Local community, residents, developers informed and initiated by 2010.		
Indicator: Fewer incidents of infractions.		
Update: This indicator provided is not realistic for this project's objectives and is not directly measurable. Also, there is not enough historical on incidence of infractions to determine if overtime there has been a decrease. Enforcement capacity within STEER is limited.		
Suggested Next Steps: Develop and implement an enforcement plan to include STEER areas and objectives for enforcement in conjunction with an outreach campaign to address awareness issues of STEER threat areas.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1B:** Develop more stringent regulations for shoreline and insular development.	**Project 1:** Research best practice guidelines in other jurisdictions **Project Status:** *In Progress.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Development and enforcement of STEER regulations.		
Indicator: Report on regulations		
Update: Rutgers Study in 2011 and Recommendations made however the development and enforcement of STEER specific regulations has not been initiated.		
Suggested Next Steps: Re-vitalize legislative support for creation and implementation of a Comprehensive Land and Water Use Management Plan for the Territory.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1B:** Develop more stringent regulations for shoreline and insular development.	**Project 2:** Amend zoning laws: See Land-Based Strategy 1.1.B, Action Step 4 of STEER Management Plan **Project Status:** *In Progress.*	**Proposed Funding Source:** None Specified. **Lead Agency:** DPNR **Proposed partners:** None specified. **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Develop a Comprehensive Land and Water Use for the Territory completed by 2015.		
Indicator: Plan, DPNR has comprehensive land water use plan		
Update: This plan has been drafted for over three decades but has not gained the political traction necessary for implementation.		
Suggested Next Steps: Re-vitalize legislative support for creation and implementation of a Comprehensive Land and Water Use Management Plan for the Territory.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1B:** Develop more stringent regulations for shoreline and insular development.	**Project 3:** Develop insular smart growth policies **Project Status:** *In progress.*	**Proposed Funding Source:** None specified. **Lead Agency:** DPNR **Proposed partners:** None specified. **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Increase wetland buffer on permits, BMPs for sediment reduction, conservation easements for habitat protection, clustering of buildings, common structures.		
Indicator: Policies are implemented by 2020.		
Update: Dependent upon creation of the Comprehensive Land and Water Use Management Plan for the Territory.		
Suggested Next Steps: Re-vitalize legislative support for creation and implementation of a Comprehensive Land and Water Use Management Plan for the Territory.		

Goal 3. To reduce habitat loss.		
Objective 3.1: Reduce loss of marine and adjacent shoreline habitat due to development and boat damage by 90% by 2015. **Strategy 3.1B:** Develop more stringent regulations for shoreline and insular development.	**Project 4:** Develop regulations specifically relating to impact of docks and piers on marine habitats. **Project Status:** *Not initiated.*	**Proposed Funding Source:** **Lead Agency:** DPNR, CZM **Proposed partners:** **Expected Costs:** Not specified. **Targets:** Salt Pond, Seagrass, Fisheries resources, Mangroves
Description: Marine protection		
Indicator: Regulations in place by 2015.		
Update: CZM permitting rules related to docks, piers, etc…have been developed for the Territory and so STEER specific regulations would be deemed unnecessary and not valid. Army Corps of Engineers have development standards specific to docks and piers that must be adhered to through their permitting process.		
Suggested Next Steps: Army Corps of Engineers have development standards specific to docks and piers that may be adoptable for local regulations.		

Goal 4. *To reduce unsustainable or illegal fish harvest.*		
Objective 4.1: To reduce all un-permitted take (fish, whelk, conch, lobster) in STEER waters by 2015. **Strategy 4.1.A:** Enforce existing regulations in STEER waters.	**Project 1:** Determine current level of harvesting (legal and illegal) **Project Status:** *Not initiated.*	**Proposed Funding Source:** **Lead Agency:** DFW **Proposed partners:** MMES graduates, TNC Volunteers **Expected Costs:** Not specified. **Targets:** fish (illegal fishing), coral (loss of herbivores)
Description: Which groups are involved in fishing: commercial vs. subsistence? Which species are being fished? Are bait fish stocks decreasing? Funding will be needed to take a tactful approach to documenting illegal activities. DEE issues permits.		
Indicator: Report by 2012.		
Update: DEE is not listed as a partner for this project and so they should be. There has been lack of DEE capacity to enforce within STEER as well as issues with incident reporting.		
Suggested Next Steps: Develop and implement an assessment project that looks at fishing effort within STEER both recreational and commercial. Initiate a Citizen Watch group to address DEE capacity gaps with patrolling.		

Goal 4. *To reduce unsustainable or illegal fish harvest.*		
Objective 4.1: To reduce all un-permitted take (fish, whelk, conch, lobster) in STEER waters by 2015. **Strategy 4.1.A:** Enforce existing regulations in STEER waters.	**Project 2:** Publicize existing regulations through workshops, brochures, PSA's **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** CZM, DFW, Sea Grant, TNC **Expected Costs:** Not specified. **Targets:** fish (illegal fishing), coral (loss of herbivores)
Description: Pre-post attitude surveys; to be initiated in 2010.		
Indicator: STEER users are more informed.		
Update: Signs exist within steer but there is currently no measurement of effectiveness. A newsletter is shared among the STEER core group and interested community members with updates on STEER projects; occasionally updates are given through organized meetings. A full-fledged media and outreach campaign has yet to be developed.		
Suggested Next Steps: Develop a full-fledged media and outreach campaign specific to STEER with performance measures. Use MOES-VI as a platform.		

Goal 4. *To reduce unsustainable or illegal fish harvest.*		
Objective 4.1: To reduce all un-permitted take (fish, whelk, conch, lobster) in STEER waters by 2015. **Strategy 4.1.A:** Enforce existing regulations in STEER waters.	**Project 3:** Determine current enforcement capabilities **Project Status:** *In Progress.*	**Proposed Funding Source:** **Lead Agency:** STEER Core Group **Proposed partners:** DEE **Expected Costs:** Not specified. **Targets:** fish (illegal fishing), coral (loss of herbivores)
Description: Assessment and recommendations; initiated in 2010.		
Indicator: Formal statement of the enforcement capacity to take to policy makers		
Update: See Goal 3 projects.		
Suggested Next Steps: See Goal 3 projects.		

Goal 4. *To reduce unsustainable or illegal fish harvest.*		
Objective 4.1: To reduce all un-permitted take (fish, whelk, conch, lobster) in STEER waters by 2015. **Strategy 4.1.A:** Enforce existing regulations in STEER waters.	**Project 4:** Educate current enforcement officers **Project Status:** *In Progress.*	**Proposed Funding Source:** **Lead Agency:** STEER Core Group **Proposed partners:** DFW, CZM, DEP, DEE **Expected Costs:** Not specified. **Targets:** fish (illegal fishing), coral (loss of herbivores)
Description: Pre-post knowledge surveys; initiated in 2009 and should be done annually. NOAA/NMFS? USFWS (Mike Evans) needs to be frequent (6 mo.)		
Indicator: Enforcement officers trained in STEER fishery (and other) issues; Additional Indicator: Increased enforcement activity: # stations, patrolling hours		
Update: See Goal 3 projects.		
Suggested Next Steps: See Goal 3 projects.		

Goal 4. *To reduce unsustainable or illegal fish harvest.*		
Objective 4.1: To reduce all un-permitted take (fish, whelk, conch, lobster) in STEER waters by 2015. **Strategy 4.1.A:** Enforce existing regulations in STEER waters.	**Project 5:** Determine feasibility of eliminating all take **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER Core Group **Proposed partners:** DFW **Expected Costs:** None specified. **Targets:** fish (illegal fishing), coral (loss of herbivores)

Description: Assessment and recommendations; to be initiated in 2013. Discussion occurs once enforcement is effective, STEER Management, Entity is in place, etc.		
Indicator: Report on recommendations.		
Update: It is difficult to imagine that there would be political support for this project as the intent of this project to eliminate all take within STEER is controversial from a stakeholder perspective. There is also a severe lack of data to inform baselines of historical marine resource and habitats conditions much less an overall picture of the status of resources currently to determine whether elimination of take is necessary. There would also need to be ecological and socio-economic feasibility assessments prior to this.		
Suggested Next Steps: Stock assessments and habitat presence and condition baseline assessment also resource utilization studies.		

Goal 4. *To reduce unsustainable or illegal fish harvest.*		
Objective 4.1: To reduce all un-permitted take (fish, whelk, conch, lobster) in STEER waters by 2015. **Strategy 4.1.B:** Designate STEER waters a no take zone by 2020 (eliminate bait fishing and hand lining).	**Project 1:** Educate community on the benefits of no-take areas. **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** DFW **Proposed partners:** MMES graduate students, TNC, Volunteers **Expected Costs:** None specified. **Targets:** fish (illegal fishing), coral (loss of herbivores)
Description: Not specified.		
Indicator: Not specified.		
Update: See Strategy 4.1.A, Project 2.		
Suggested Next Steps: See Strategy 4.1.A, Project 2.		

Goal 4. *To reduce unsustainable or illegal fish harvest.*		
Objective 4.1: To reduce all un-permitted take (fish, whelk, conch, lobster) in STEER waters by 2015. **Strategy 4.1.B:** Designate STEER waters a no take zone by 2020 (eliminate bait fishing and hand lining).	**Project 2:** Work with senators to create legislation **Project Status:** *Not initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** None specified **Proposed partners:** None specified **Expected Costs:** **Targets:** fish (illegal fishing), coral (loss of herbivores)
Description: Eliminate bait fishing, Eliminate hand lining		
Indicator: None described.		
Update: See Strategy 4.1A, Project 5.		
Suggested Next Steps: See Strategy 4.1A, Project 5.		

Goal 9. *To reduce marine-based pollution.*		
Objective 9.1 : Reduce the amount of pump-out (blackwater and graywater) pumped into STEER by 90% by 2015. **Strategy 9.1.A:** Establish/ Advocate on-board treatment and/or Pump-Out Program for STEER.	**Project 1:** Assess existing pump-out facilities, boats with onboard treatment, transfer options to understand needs **Project Status:** *Not initiated*	**Proposed Funding Source:** None specified. **Lead Agency:** CZM **Proposed partners:** UVI **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Existing pump out facilities within STEER identified (capacity and potential need, determined by number of boats); initiated by 2011. Understanding of why boaters do not use existing pump-out facilities. Disposal of pump-out is an issue.		
Indicator: Pump-out at Compass Pt by 2011.		
Update: Since this time there has been at least one private entity that has begun providing these services, incidentally a community		

member who attended some of the planning meetings.
Suggested Next Steps: Work with this private entity in determining rate of usage, use existing boat registration data and surveys to determine potential inputs to STEER. Work with EPA under Clean Marina Program to develop plans at various marinas. In 1995, Virgin Islands Marine Advisory services received monies to install pumpout facilities at 6 marinas in St.Thomas(unsure of number in STEER). Revisit this funding source to assist.

Goal 9. To reduce marine-based pollution.		
Objective 9.1 : Reduce the amount of pump-out (blackwater and graywater) pumped into STEER by 90% by 2015. **Strategy 9.1.A:** Establish/ Advocate on-board treatment and/or Pump-Out Program for STEER.	**Project 2:** Develop incentives for boats to get composters or MSD (III). **Project Status:** *Not initiated*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER **Proposed partners:** UVI, DPNR, CZM **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Report # of boats being registered with on-board tanks.		
Indicator: Boaters are compliant by 2011.		
Update: Unknown		
Suggested Next Steps: Registered vessels have to report presence and capacity of holding tanks to Division of Environmental Enforcement, initiate data mining to capture this information and survey marinas to quantify these vessels. Use information to inform and implement program needs.		

Goal 9. To reduce marine-based pollution.		
Objective 9.1 : Reduce the amount of pump-out (blackwater and graywater) pumped into STEER by 90% by 2015. **Strategy 9.1.A:** Establish/ Advocate on-board treatment and/or Pump-Out Program for STEER.	**Project 3:** Determine alternatives for facilities, assess costs, funding? **Project Status:** *Not initiated.*	**Proposed Funding Source:** EPA **Lead Agency:** STEER **Proposed partners:** UVI, DPNR, CZM **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Find funding/partners for additional pumpout facilities. EPA Beach Grant: funding for pump out vessel?		
Indicator: Funding sought, Funding identified for pump out business; pump out facilities in place by 2011.		
Update: At least one private entity has found the funding to purchase a pumpout vessel. No data on usage and demand for services.		
Suggested Next Steps: Work with private entity to determine usage patterns to determine where the most need is, identify funding sources.		

Goal 9. To reduce marine-based pollution.		
Objective 9.1 : Reduce the amount of pump-out (blackwater and graywater) pumped into STEER by 90% by 2015. **Strategy 9.1.A:** Establish/ Advocate on-board treatment and/or Pump-Out Program for STEER.	**Project 4:** Establish additional pump-out facilities **Project Status:** *Not initiated*	**Proposed Funding Source:** EPA **Lead Agency:** STEER **Proposed partners:** UVI, DPNR, CZM **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: STEER as non-profit to provide funding for mobile and land-based pump outs with fixed sizes and rates.		
Indicator: An appropriate number of pump-out stations to accommodate the quantity and spatial distribution of boaters in STEER by 2020; Additional pump-out in/near STEER		

Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators
Suggested Next Steps: as above in other objectives

Goal 9. To reduce marine-based pollution.		
Objective 9.1 : Reduce the amount of pump-out (blackwater and graywater) pumped into STEER by 90% by 2015. **Strategy 9.1.A:** Establish/ Advocate on-board treatment and/or Pump-Out Program for STEER.	**Project 5:** Discuss with enforcement the establishment of regulations regarding vessel registration with proof of receipts and functional holding tanks, and alternatives to holding tanks- including composting, incinerating or other non-discharge systems(all considered Type3 MSDs), as well as treated discharge systems (Types 1 & 2 MSDs) **Project Status:** *Not Initiated.*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER **Proposed partners:** UVI, DPNR, CZM **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Enforcement with education; Enforcement will link future boat registration (Aug '10) with on-board- STEER can do-grant submission thru DFW? Mandate pump out facilities (full time access) to any marina with more than x# of slips or X# of sq. ft. of submerged lands. Clearly state whether treated discharge is permitted.		
Indicator: Pamphlet given at registration with locations listed and potential fines; to be initiated in 2012.		
Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators though the offer has been made through MOES-VI for STEER to participate in the annual fisher registration workshops, project name: MOES-VI Improving Fishing Community Awareness and Compliance.		
Suggested Next Steps: Existing VI laws dictate that territorial waters are no discharge zone, no treated or untreated sewage can be discharged. Work with DEE to provide information at boater registration and fisher registration through MOES-VI.		

Goal 9. To reduce marine-based pollution.		
Objective 9.1 : Reduce the amount of pump-out (blackwater and graywater) pumped into STEER by 90% by 2015. **Strategy 9.1.A:** Establish/ Advocate on-board treatment and/or Pump-Out Program for STEER.	**Project 6:** Keep records of use to gauge effectiveness (increase in pump-out facility use = decrease in illegal pump-out?) **Project Status:** *Not initiated*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER **Proposed partners:** pump-out facility owner **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Records.		
Indicator: Record kept.		
Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators.		
Suggested Next Steps: Work with DEE/CZM to locate and inspect all known pumpouts, initiate program in marinas, pamphlet distrinbution.		

Goal 9. To reduce marine-based pollution.		
Objective 9.1 : Reduce the amount of pump-out (blackwater and graywater) pumped into STEER by 90% by 2015. **Strategy 9.1.A:**	**Project 6:** Incorporate incentives for marinas to have pump out facility for public, as part of Clean Marina Program **Project Status:**	**Proposed Funding Source:** None specified. **Lead Agency:** STEER **Proposed partners:** DPNR, CZM, UVI **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources

Establish/ Advocate on-board treatment and/or Pump-Out Program for STEER.	*Not initiated*	
Description: Marinas have pump-out facilities; Private funding? Post reasonable prices for pump out and/or gallons. Encourage composters or other non-discharge treatment.		
Indicator: Businesses buy-in to program.		
Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators		
Suggested Next Steps: As above in previous projects		

Goal 9. *To reduce marine-based pollution.*		
Objective 9.2 : Reduce the input of point (illicit discharge) and non-point sources of pollution by _TBD%_ from marinas and boats by 2015 to improve the health of seagrass communities and the function of nursery habitats. **Strategy 9.2.A:** Promote Blue Flag Program and Clean Marina Program.	**Project 1:** Adopt Clean Marina Program Plans to STEER **Project Status:** *In Progress.*	**Proposed Funding Source:** NOAA and EPA **Lead Agency:** NOAA (financial incentive program) **Proposed partners:** EPA (CWA) **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Plan outlines ways marinas are involved in the protection of the environment; Understand that Clean Marina Program already required (federal). Oppose further marina expansion.		
Indicator: # of marinas participating by 2015		
Update: Blue Flag marina program up and running in other areas of Virgin Islands. Initial talks held with EPA about revitalizing this program, no further work known.		
Suggested Next Steps: EPA initiate and drive this process, through and with partners in Caribbean Coral Reef Protection Group. This is focus area for that group.		

Goal 9. *To reduce marine-based pollution.*		
Objective 9.2 : Reduce the input of point (illicit discharge) and non-point sources of pollution by _TBD%_ from marinas and boats by 2015 to improve the health of seagrass communities and the function of nursery habitats. **Strategy 9.2.A:** Promote Blue Flag Program and Clean Marina Program.	**Project 2:** Assess the threat and issues arising from marinas in STEER- why aren't marinas compliant? **Project Status:** *Not initiated*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER **Proposed partners:** None specified. **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Information on how to proceed; Why it's working and what we need to do?		
Indicator: Summary report by 2011		
Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators.		
Suggested Next Steps: as above in previous projects. These smaller projects bear similar end goals and are redundant in nature, other projects under this goal will give the information necessary to act on these components.		

Goal 9. *To reduce marine-based pollution.*		
Objective 9.2 : Reduce the input of point (illicit discharge) and non-point sources of pollution by	**Project 3:** Engage marinas and enforcement **Project Status:**	**Proposed Funding Source:** None specified. **Lead Agency:** STEER **Proposed partners:** DEE **Expected Costs:** None specified.

TBD% from marinas and boats by 2015 to improve the health of seagrass communities and the function of nursery habitats. **Strategy 9.2.A:** Promote Blue Flag Program and Clean Marina Program.	*Not initiated*	**Targets:** Coral, Seagrass, Fisheries Resources
Description: Marinas adjacent to STEER active in VI's CM Program, have spill response plans and solutions to issues such as bilge cleaning facilities. Create incentives or compliance programs (fly a flag, get a plaque). Provide reporting or info chain from public to STEER to law enforcement. Provide means for community to assist in clean-up.		
Indicator: # of infractions decrease and Blue Flag members increase by 2012		
Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators.		
Suggested Next Steps: similar to projects above can be accomplished under those projects if initiated.		

Goal 9. *To reduce marine-based pollution.*		
Objective 9.2 : Reduce the input of point (illicit discharge) and non-point sources of pollution by _TBD%_ from marinas and boats by 2015 to improve the health of seagrass communities and the function of nursery habitats. **Strategy 9.2.A:** Promote Blue Flag Program and Clean Marina Program.	**Project 4:** Ensure containment: filters, treatment, booms, fuel cups, spill equipment at docking stations **Project Status:** *Not initiated*	**Proposed Funding Source:** None specified. **Lead Agency:** STEER **Proposed partners:** DPNR **Expected Costs:** None specified. **Targets:** Coral, Seagrass, Fisheries Resources
Description: Speedy response of enforcement to diesel or oil slicks, Spills cleaned up; Env sub-committee of HTA completed Blue Flag feasibility study. Blue Flag "National Jury". Organizations on board include DPNR, Megan's, etc. Marinas in STEER can join.		
Indicator: Summary Report by 2015		
Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators.		
Suggested Next Steps: As above in similar cases, lead agencies need to enforce legal requirements, possible mechanism is EPA Clean Marina Program through Caribbean Coral Reef Protection Group.		

Goal 9. *To reduce marine-based pollution.*		
Objective 9.3: To reduce hydrocarbons, noise, wake from larger commercial vessels **Strategy 9.3.A:** Re-route ferry boats, barges through Great/Little St. James.	**Project 1:** Begin to address ferries, speed boats, large tankers and barges. Also option to limit speed vs. rerouting **Project Status:** *Not initiated*	**Proposed Funding Source:** None specified. **Lead Agency:** None specified. **Proposed partners:** None specified. **Expected Costs:** None specified. **Target: Fisheries Resources**
Description: Would fall under existing regulations? Need enforcement. Perhaps a citizen-led initiative		
Indicator: None specified.		
Update: This project has not been initiated due to lack of capacity and limited time for existing STEER coordinators.		
Suggested Next Steps: Coordination needed as part of marina's SOP to provide a person for a portion of the day to enforce the wake rules in close proximity to mangroves etc. The Human Use assessment completed in 2012 should be able to guide actions on this project.		

3.3 Coral Bay, St. John and Fish Bay, St. John LAS

Unlike STXEEMP and STEER, both Coral and Fish Bay do not have finalized LAS strategies, including that for fishing. In 2010, CRCP funded focus groups facilitated by Lighthouse Consulting in St. John and invited local and federal resource managers and stakeholders to attend. During these focus groups, participants engaged in dialogue pertaining to marine resource management issues in Coral Bay and Fish Bay and developed goals, objectives and projects for addressing these issues. These focus groups weren't very well attended by community stakeholders. Lighthouse Consulting compiled this information into an initial draft that was reviewed by key participants and other stakeholders that had not made it to the meeting. Feedback on the initial draft iterated concerns that most of the projects did not necessarily address goals and objectives and in essence were not priorities. Since then, the final drafts of the LAS documents for Coral Bay and Fish Bay have not been completed. Currently, the NOAA CRCP USVI Coral Management Liaison is in the process of revisiting the Coral Bay and Fish Bay LASs. Considering the time lapse from 2010 to the present, it would be most appropriate to convene LAS focus groups again with major focus on specific needs of Coral Bay and Fish Bay pertaining to marine resource management now. In 2011, Coral Bay, Fish Bay and East End homeowner associations received a total of $3,000,000 to pave roads in order to reduce the amount of runoff into corresponding bays. Also, efforts have been made by these associations to implement community led projects to address threats within the watershed and in the bays; this includes development of a watershed management plan for Coral Bay and currently the development of a marine resource use plan is being discussed. These efforts must be taken into account when new LAS focus groups are had and the LASs for Coral Bay and Fish Bay are completed.

4.0 Summary of Fisheries LAS Project Gaps and Limitations

As it stands, out of 43 Fisheries LAS projects for the STXEEMP, 16 have not been initiated (37%), 22 are in progress (51%) and 5 are completed (12%) (Table 3). For STEER, there were a total of 36 projects proposed out of which 23 projects have not been initiated (64%), 11 projects are in progress (31%) and 2 projects have been completed (5%) (Table 3). These numbers suggest that a very small number of projects in both STEEXMP and STEER have made it to completion. However, in STEER there are substantially more projects that have not been initiated versus those in progress and the exact opposite holds true for STXEEMP.

Table 3. Summary of Fisheries LAS project implementation status by focus area.

Focus LAS Area	**Project Implementation Status**			
	Not Initiated	*In Progress*	*Completed*	*Total No. of Projects*
STXEEMP	16 (37%)	22 (51%)	5 (12%)	43
STEER	23 (64%)	11 (31%)	2 (5%)	36

There are many confounding factors that play a role as to why the status of the Fisheries LAS projects for both STXEEMP and STEER are as they stand and the 2012 USVI coral reef management capacity assessment (aka Cap Assessment) shines an immense amount of light on the general reasons underlying the implementation status of LAS projects in general (Sustainametrix, 2012).

In addition to the general limitations to USVI Fisheries LAS project implementation, there were also contributing factors stemming from the LAS development process itself. In terms of the methodologies for establishing LASs per geographic focus area, the decision to make existing the existing management plans serve as a proxy for LAS projects may not had been the ideal move. This is because, for example, at the time the management plan for the STXEEMP (2002) was created versus the initiation of the LAS process (2005-2006) many of the specific priorities were either outdated or not well-defined or detailed. The process for drafting the STXEEMP management plan involved stakeholder meetings of a select few as the STXEEMP development committee and there was not a lot of stakeholder involvement outside of those meetings nor was there sound scientific data used to develop goals, objectives and projects. On the other hand, the STEER management plan was created with grand efforts of stakeholder involvement and use of some scientific data; however, the CAP process was used to develop action steps rather than projects which would be specific to a strategy and should have been considered in sequenced phases rather than stand-alone projects. Another caveat to the CAP process was that often times expected costs, project leads and partners, and project descriptions and indicators were not iterated unlike the STXEEMP management plan. This makes it difficult to compare the integrity of projects proposed. Additionally, many of the projects were redundant with the same objectives and steps and often times the projects or actions steps should have been consolidated. This would have led to a smaller number of projects that would have been very focused on achieving success with specific steps. This would have also made for a much more attractive project list that would seem feasible to be tackled by the limited staff. For example, the Territorial Coral Reef Initiative coordinator during the first few years of the LAS focused much of her time on implementing projects in the STXEEMP as it was physically feasible and she has a staff of between 3-6 people over time. It was rather difficult for her to also address STEER, Coral Bay and Fish Bay needs. Also, specific to STEER, there has been one individual spearheading STEER projects and a list of 36 fisheries projects, not to count all of the others, can be rather extensive for one's scope of work. Beyond the issue of staff capacity, many of the projects are more Territory-wide specific and implementation would be dependent upon changes in regulations and political will-which should be the focus of DPNR and should be outlined in the SOW for the TCI Coordinator and DPNR Commissioner to tackle.

The more general, major issues that have stuck out in this inventory mirror the issues identified through the cap assessment and can be considered the overarching management capacity gaps that may be contributing to success/lack of implementation for these projects. The challenges and limitations faced when attempting to coordinate and implement projects in the US Virgin Islands are many. The attempt here is to highlight the major issues which include but are not limited to the following: inconsistent leadership, lack of formal entity (agency or NGO) and political commitment, staff recruitment and retention, lack of funding and resources, lack of communication and formal and informal outreach and education opportunities for building awareness and increasing compliance amongst stakeholders. A more detailed description of issue capacity gap is iterated in the Cap Assessment developed by Sustainametrix (2012) and may be accessed at the following link: http://coralreef.noaa.gov/aboutcrcp/strategy/reprioritization/capacityassessments/resources/finalusvicapacityassessment.pdf.

5.0 USVI Fisheries LAS Projects: Direction

It is clear that there are many obstacles that may hinder progress on USVI Fisheries LAS project implementation. The last prioritization process that took place in the US Virgin Islands was the Cap Assessment which brought to light the challenges and limitations for project implementation, re-prioritized existing projects based on level of importance and costs in collaboration with stakeholders and managers and provided specific recommendations for addressing capacity gaps and next steps toward project success. The next most feasible step for driving USVI Fisheries LAS projects forward is to implement a formal roll out of the USVI capacity assessment which has not been done to date but is proposed for February of 2016. The roll out will consist of a presentation to key legislators, division directors and program managers in an effort to gain political buy-in for driving Cap Assessment recommendations forward. Furthermore, now is the time for laying out the goal plan for achieving LAS project success as the USVI Territory embarks on the journey into the Caribbean Challenge Initiative which was launched in 2008 with support from The Nature Conservancy, the CCI is an endeavor of unprecedented scale and scope. Ten participating CCI countries and territories have committed to:

- conserving at least 20% of their nearshore marine and coastal environments in national marine protected areas systems by 2020; and
- creating National Conservation Trust Funds, endowed by new sustainable finance mechanisms (such as tourism fees), dedicated to solely to funding park management.

CCI presents a great opportunity for continuing partner support and extending that network which builds upon existing resources and reduces the amount of funding and USVI government and NGO staff time needed for driving projects forward. This also creates a platform for sustainable coral reef and MPA management that is unprecedented for the US Virgin Islands and the Caribbean. It is critical to stress the need for utilizing existing resources and data for creating the baseline for which to develop next steps; there is no need to reinvent the wheel in most cases when it comes to achieving project success.

6.0 References

1. AECOM, 2014. Marine Outreach and Education US Virgin Islands Style: Strategizing for Improved Outreach, Education and Communications Pertaining to USVI Marine and Fisheries Management and Conservation. Prepared for the NOAA Coral Reef Conservation Program.
2. Agar, J.J., M. Shivlani, J.R. Waters, M. Valdes-Pizzini, T. Murray, J. Kirkley and D. Suman. 2005. US Caribbean Fish Trap Fishery Costs an Earnings Study. NOAA Technical Memorandum NMFS-SEFSC-534.
3. Appeldoorn, R., J. Beets, J. Bohnsack, S. Bolden, D. Matos, S. Meyers, A. Rosario, Y. Sadovy and W. Tobias. 1992. Shallow Water Reef Fish Stock Assessment for the U.S. Caribbean. National Oceanic and Atmospheric Administration Technical Memorandum NMFS-SEFSC-304. 70 pp.
4. Catanzaro, D., Rogers, C.S., HIllis-Starr, Z., Nemeth, R.S. & Taylor, M. (2002). *Status of coral reefs of the U.S. Virgin Islands*. pp. 131-150.
5. Center for Coastal Monitoring and Assessment (CCMA)-NCCOS. The State of Coral Reef Ecosystems of the United States and Pacific Freely-Associated States: 2008. Pp.29-73.
6. Division of Fish and Wildlife, Department of Planning and Natural Resources, Government of the U.S. Virgin Islands. Unpubl. MS 52 pp.
7. Gladfelter, W.B., Ogden, J.C. & Gladfelter, E.H. (1980). Similarity and diversity among coral reef fish communities: A comparison between tropical western Atlantic (Virgin Islands) and tropical central Pacific (Marshall Islands) patch reefs. *Ecology, 61*, 1156-1168.
8. Jeffrey, C.F.G., Anlauf, U., Beets, J., Caseau, S., Coles, W., Friedlander, A.M., Herzlieb, S., Hillis-Starr, Z., Kendall, M., Mayor, V., Miller, J., Nemeth, R., Rogers, C. & Toller, W. (2005). The State of Coral Reef Ecosystems of the U.S. Virgin Islands, pp. 45-90.
9. Kojis, B., 2004. Census of the Marine Commercial Fishers of the U.S. Virgin Islands. Department of Planning and Natural Resources. USVI Division of Fish and Wildlife. St.Thomas, U.S.V.I. 78 p.
10. Mateo, I. 2000. Recreational Fisheries Assessment Project: 1 October 1995 to 30 September 2000. Final report to the U.S. Fish and Wildlife Service Sportfish Restoration Program. F-8
11. Mateo, I. 2001. Annual Performance Report, Recreational Fisheries Assessment Project, F-8.
12. Mateo, I. 2004. Survey of resident participation in recreational fisheries activities in the US Virgin Islands. Proc. Gulf Carib. Fish. Inst. 55:205-222.
13. Nemeth RS (2005) Population characteristics of a recovering US Virgin Islands red hind spawning aggregation following protection. Marine Ecology Progress Series 286:81-97
14. Nemeth RS, Blondeau J, Herzlieb S, Kadison E (2007) Spatial and temporal patterns of movement and migration at spawning aggregations of red hind, *Epinephelus guttatus*, in the U.S.Virgin Islands. Environmental Biology of Fishes 78:365-381
15. NOAA (2005). Socioeconomics of USVI reefs.
16. Page, G.G., Nemerson, D. and S.B. Olsen. September 2012. *US Virgin Islands Capacity Assessment: An Analysis of Issues Affecting the Management of Coral Reefs and the Associated Capacity Building Needs in the United States Virgin Islands*. Sustainametrix. Prepared for the Coral Reef Management Network in the United States Virgin Islands and the NOAA Coral Reef Conservation Program.
17. Pittman, S.J., Hitt, S., Renchen, G., and C. Jeffrey. 2012. Synthesis of Marine Ecosystem Monitoring Activities for the US Virgin Islands: 1999-2009. NOAA Technical Memorandum NOS NCCOS 148. Silver Sprin, MD. 55pp.
18. Randall, J.E. 1963. An analysis of fish populations on artificial and natural reefs in the US Virgin Islands. *Carib. J. Sci.* Vol. 3(1):31-47.

19. Rogers, C.S. & Beets, J. (2001). Degradation of marine ecosystems and decline of fishery resources in marine protected areas in the U.S. Virgin Islands. *Environ. Conserv., 28*, 312-322.
20. Rothenberger, P. 2012. *Virgin Islands Marine Protected Areas Network*. Presented to the MPA Center National Systems Partner Meeting, June 13, 2012. http://www.mpa.gov/pdf/fac/rothenberger_usvi_mpa_network.pdf
21. Rothenberger, P.B., Cox, J., Curtis, C., Fisher, S., Garrison, W.S., V.; Hillis-Starr, Z.; Jeffrey, C. F. G.; Kadison, E.; Lundgren, I.; Miller, W. J.; Muller, E.; Nemeth, R.; Paterson, S.; Rogers, C.; Smith, T.; Spitzack, A.; Taylor, M.; Toller, W.; Wright, J.; Wusinich-Mendez, D. & Waddell, J. (2008). *The state of coral reef ecosystems of the U.S. Virgin Islands*. Assessment of the status of the coral reef ecosystems. Saint Croix.
22. Sjoken, R. and Uwate, R. 2005. USVI Marine Resources and Fisheries Strategic and Comprehensive Plan. USVI Division of Fish and Wildlife.
23. Stoffle, Brent, James R. Waters, Susan Abbott-Jamieson, Shawn Kelley, David Grasso, Joy Freibaum, Susanne Koestner, Nate O'Meara, Sita Davis, Marissa Stekedee, and Juan Agar. 2009. Can an Island be a Fishing Community: An Examination of St. Croix and its Fisheries. NOAA Technical Memorandum NMFS-SEFSC-593, 57p.
24. Swingle, W. E., A. E. Dammann, and J. A. Yntema. 1970. Survey of the commercial fishery of the Virgin Islands of the United States. Proceedings of the Gulf and Caribbean Fisheries Institute, Vol. 20, pp. 110-121.
25. Toller, W. 2003. Impact of the expansion of Buck Island Reef National Monument on recreational fishers of St. Croix. Division of Fish and Wildlife, Department of Planning and Natural Resources, Government of the U.S. Virgin Islands. Unpubl. MS. 9 pp.
26. United States Virgin Islands'Coral Reef Management Priorities. Silver Spring, MD: NOAA. http://coralreef.noaa.gov/aboutcrcp/strategy/reprioritization/managementpriorities/resources/usvi_mngmnt_clr.pdf
27. Valle-Esquivel, M. and G. Diaz. 2003. Preliminary estimation of reported landings, expansion factors and expanded landings for the commercial fisheries of the United States Virgin Islands. NOAA NMFS Sustainable Fisheries Division Contribution SFD-2003-0027, 50 pp.
28. van Beukering, P., Brander, L., van Zanten, B., Verbrugge, E. and Lems, K . 2011. The Economic Value of the Coral reef Ecosystems in the US Virgin Islands. Institute for Environmental Studies VU University Amsterdam Commissioned by NOAA Coral Reef Conservation Program.

Appendix B. USVI Priorities Crosswalk with CRCP

Table 2 shows how USVI's Priority Goals and Objectives correlate to NOAA CRCP's National Goals and Objectives for coral reef conservation. Table 2 was developed after the USVI Coral Reef Management Priority Setting Process was complete to explicitly identify potential partnerships between the managers in USVI and NOAA CRCP. Addressing both local jurisdictional priorities and national goals and objectives will increase efficiency and leveraging of the resources available for coral reef conservation. NOAA CRCP will use this table to inform future investments in coral reef conservation in USVI.

Table 2. Correlations between USVI's Priority Goals and Objectives and CRCP's National Goals and Objectives

USVI's Priority Goals and Objectives	**NOAA's National Goals and Objectives for Coral Reef Conservation**	**Explanation of Correlation (as needed)**
GOAL 1: REDUCE IMPACTS TO CORAL REEF ECOSYSTEMS BY REDUCING TERRESTRIAL SEDIMENT AND POLLUTANT INPUTS AND IMPROVING WATER QUALITY.		
Objective 1.1: Define and identify priority watersheds and develop management plans that reduce the effects of contaminants and poor water quality on reef resources.	LBSP Objective 1.1: Identify and prioritize those coral reef ecosystems and associated watersheds, within each jurisdiction, that will benefit the most from implementing management conservation strategies to reduce land-based sources of pollution. LBSP Objective 1.3: Implement watershed management plans and relevant Local Action Strategies (LAS) within priority coral reef ecosystems and associated watersheds to improve water quality and enhance coral reef ecosystem resilience. Where needed, develop (or update) watershed management plans that incorporate coral reef protection measures.	No explanation needed.
Objective 1.2: Develop and apply USVI-specific best management practices and adaptive management plans as necessary throughout the territory (e.g., installation of culverts, catch basins, vegetative buffers, etc.).	LBSP Objective 1.3: Implement watershed management plans and relevant Local Action Strategies (LAS) within priority coral reef ecosystems and associated watersheds to improve water quality and enhance coral reef ecosystem resilience. Where needed, develop (or update) watershed management plans that incorporate coral reef protection measures.	The implementation of watershed management plans and LASs includes the development and application of best management practices (BMPs) to improve water quality.
Objective 1.3: Support the development and implementation of new and stricter development permit conditions that include	LBSP Objective 3.3: Support or help develop intergovernmental mechanisms (appropriately designed for each jurisdiction) to promote	The development of stronger conditions and requirements on local development permits that are aligned with federal regulatory guidelines will

strong mitigation actions, avoidance, minimization of impacts and compensation. Conditions should also give consideration to cumulative impacts of stressors, including existing and expected development, and other stressors.	effective local management actions and decisions.	enable better coordination between local and federal agencies and improve development decision-making processes.
Objective 1.4: Ensure that the necessary and consistent regulatory and programmatic framework exists and is enforced to implement watershed management strategies necessary to protect coral ecosystems.	LBSP Objective 3.4: Ensure that the necessary and consistent regulatory and programmatic framework exists and is enforced to implement watershed management strategies necessary to protect coral ecosystems.	No explanation needed.
GOAL 2: COMPREHENSIVE EDUCATION AND OUTREACH PROGRAM TO CREATE BUY-IN AND BUILD PUBLIC SUPPORT FOR AN EFFECTIVE CORAL REEF CONSERVATION PROGRAM THAT TARGETS RESOURCE USERS, GENERAL PUBLIC AND DECISION-MAKERS.		
Objective 2.1: Convey the importance and economic value of the reef to key constituencies and measure their understanding of the effect of human impacts, such as overfishing, pollution, etc., on this value.	Fishing Impacts Objective 4.4: Obtain socioeconomic and human dimension data to inform jurisdiction-specific education and communication strategies and initiatives and monitor program outcomes. Climate Objective 2.3: Characterize socioeconomic effects of climate change impacts on coral reef ecosystems to identify vulnerable reef-dependent human communities and understand the impacts to these communities. LBSP Objective 3.5: Increase public and political awareness and understanding of the ecological and socioeconomic impacts of land-based pollution on coral reef resources to promote better stewardship and informed decisions regarding activities in watersheds that may adversely impact coral reef ecosystems.	The USVI identified two social science priorities in this objective. The first is to measure and convey economic value of coral reef ecosystems. The next is to assess the understanding of key constituencies of the effect of human-induced impacts to the reef and therefore how these impacts affect the economic value of coral reef ecosystems. Key constituencies include policy makers, the voters that support them and relevant stakeholder groups.
Objective 2.2: Ensure public support for resource management actions by hosting conferences, workshops and making school presentations. This outreach program should	Fishing Impacts Objective 4.1: Develop curricula incorporating locally relevant lessons plans about coral reef ecosystems and fisheries management that meets current state and national standards.	This objective calls for the development of a multifaceted coral reef outreach and education program that includes informal education such as conferences, workshops, presentations and broad

enable stewardship at all levels of society to affect long-term behavioral change. • Develop communication strategies and tools and identify priority target audiences. • Support programs that connect youth classroom experience with field experience. Build from existing programs and curricula such as the Math & Environmental Science Academy and the proposed Reef Rangers. • Create opportunities to keep coral reef stewards who were nurtured in the youth programs engaged in coral reef conservation, policy and advocacy (e.g., internships, university curriculum, and coral scholarships).	Fishing Impacts Objective 4.3: Develop targeted, locally relevant outreach and communication strategies to increase community understanding and support for regulations to protect key coral reef ecosystem species/functional groups and expanded use of marine protected areas (MPAs). LBSP Objective 3.5: Increase public and political awareness and understanding of the ecological and socioeconomic impacts of land-based pollution on coral reef resources to promote better stewardship and informed decisions regarding activities in watersheds that may adversely impact coral reef ecosystems.	outreach efforts as well as formal education with the introduction of new programs and curricula in the USVI school system and the University of the Virgin Islands.
Objective 2.3: Emphasize transfer of information and research findings to the general public, developers and decision-makers.	Fishing Impacts Objective 4.2: Develop and implement effective strategies and tools to improve communication between scientists, managers and policy makers on best management practices to protect key coral reef ecosystem species and functional groups.	Emphasis on the need to improve the transfer of information from the science community to policy-makers as called for in the Fishing Impacts objective, but also to the general public and stakeholder groups that are impacting the reef resources such as developers.
GOAL 3: INCREASE THE ABILITY TO EFFECTIVELY ENFORCE EXISTING RULES, REGULATIONS AND LAWS.		
Objective 3.1: Maintain sufficient law enforcement staff and enforce regulations on priority rules and regulations, such as development practices, permit conditions, MPA regulations and fisheries regulations.	Fishing Impacts Objective 3.2: Strengthen local agency and community capacity for effective and consistent enforcement of regulations or behaviors that reduce impacts of fishing on coral reef ecosystems. LBSP Objective 3.1: Ensure that coral reef jurisdictions have adequate resources and capacity to develop and implement management plans, assess water quality and coral reef ecosystem condition, enforce regulations and evaluate	The USVI currently suffers from a significant deficit in the number of qualified and capable enforcement staff that are able to dedicate their time to coral reef and coastal and marine resource issues such as the enforcement of MPAs, fisheries regulations and compliance with development permit conditions and regulations. Existing enforcement staff in the Department of Planning and Natural Resources are often forced to focus on homeland security and public safety issues. The development of strong natural resource

	performance. LBSP Objective 3.4: Ensure that the necessary and consistent regulatory and programmatic framework exists and is enforced to implement watershed management strategies necessary to protect coral ecosystems.	management legislation and regulations is rendered ineffective if the enforcement capability to support compliance is insufficient.
Objective 3.2: Develop and provide incentive mechanisms for enforcement programs and enforcement officers to keep existing staff and attract new staff.	none	none
Objective 3.3: Provide cross training between science and management departments and enforcement officers to increase enforcement capacity and enable cross-enforcement of existing regulations.	Fishing Impacts Objective 3.2: Strengthen local agency and community capacity for effective and consistent enforcement of regulations or behaviors that reduce impacts of fishing on coral reef ecosystems. LBSP Objective 3.1: Ensure that coral reef jurisdictions have adequate resources and capacity to develop and implement management plans, assess water quality and coral reef ecosystem condition, enforce regulations and evaluate performance.	No explanation needed.
GOAL 4: REDUCE FISHING IMPACTS ON CRITICAL STOCKS THAT MOST DIRECTLY AFFECT THE HEALTH AND RESILIENCE OF THE REEF ECOSYSTEM.		
Objective 4.1: Reduce fishing effort on prioritized key coral reef associated species or functional groups (e.g., herbivores, juveniles, apex predators, etc.).	Fishing Impacts Objective 1.2: Prioritize key coral reef associated species or functional groups (e.g., herbivores, apex predators, etc.) on which to focus management, research and monitoring activities for each jurisdiction or managed area.	The USVI specifically calls for a reduction in fishing effort on key species and functional groups.
Objective 4.2: Reduce the use of inappropriate gear and fishing in MPAs by strengthening local enforcement and educational efforts.	Fishing Impacts Objective 2.4: Work with relevant agencies, offices, and communities to create, implement, and improve the management of MPAs that protect key coral reef ecosystem components and functions.	No explanation needed.
Objective 4.3: Improve commercial fisheries record keeping and fisher compliance by	Fishing Impacts Objective 1.4: Obtain necessary information on fishing effort in U.S. coral reef	The USVI objective identifies the need for a specific mechanism to collect data identified in the

developing and implementing an effective mechanism to improve the current data-gathering process.	ecosystems by measuring fishing intensity, fishing mortality, frequency, area coverage, community dependence, etc., to inform management activities.	national Fishing Impacts objective 1.4.
Objective 4.8: Obtain the necessary information to understand the impacts of recreational fisheries in the USVI.	Fishing Impacts Objective 1.4: Obtain necessary information on fishing effort in U.S. coral reef ecosystems by measuring fishing intensity, fishing mortality, frequency, area coverage, community dependence, etc., to inform management activities.	The USVI specifically identifies the need to obtain information on recreational fishing efforts in the USVI.
Objective 4.11: Understand ecological connectivity through dispersal of eggs and larvae to identify key sources and sinks, assess connectivity between existing and potential MPAs and between spawning aggregations and juvenile habitat to identify resilient areas for protection.	Fishing Impacts Objective 2.1: Identify, characterize and rank priority areas for protection within each jurisdiction, including (but not limited to): • spawning sites, nursery habitats or other areas critical to particular life-history stages • biodiversity hotspots • areas with greatest resilience or potential for restoring resilience • areas facing the greatest threats	The USVI emphasizes the need to not only identify priority areas but to also understand the connectivity between them.
Objective 4.12: Support the effective implementation of marine protected areas (MPAs).	Fishing Impacts Objective 2.4: Work with relevant agencies, offices and communities to create, implement and improve the management of MPAs that protect key coral reef ecosystem components and functions.	No explanation needed.
Objective 4.13: Assess the effectiveness of MPAs in meeting their stated goal.	Fishing Impacts Objective 2.5: Conduct biological and socioeconomic research and monitoring to assess the performance of MPAs with respect to protection and restoration of key coral reef ecosystem components and functions.	No explanation needed.
GOAL 5: MANAGE FOR RESILIENCE TO CLIMATE CHANGE AND RELATED EFFECTS, INCLUDING IMPACT OF ELEVATED SEA TEMPERATURE; SEA LEVEL RISE; ACIDIFICATION AND CALCIUM CARBONATE DISSOLUTION; HURRICANE INTENSITY/FREQUENCY AND SEDIMENTATION TO PROMOTE RECOVERY OF REEFS FROM PREVIOUS EVENTS.		
Objective 5.1: Support more research on and better understanding of the following issues. These are priorities for USVI given this management goal and objectives:	Climate Change Objective 2.2: Characterize the responses of coral reef ecosystems and their related components to climate change and ocean acidification to separate impacts from climate	The USVI Climate Change objective 5.2 covers many different research questions. The only area of overlap with the NOAA CRCP National Goals and Objectives is research on the response of coral reef

• Coral diseases (understanding of the holobiont and dynamics of the health gradient in the holobiont, etiology). • Relationship between bleaching and disease. • Coral resistance to bleaching and disease. • Cumulative effects of multiple stressors. • Resilience following global, regional and local stressors. • Possible effects of climate change on coral reefs and associated ecosystems. • Physiological tolerances and predicted shifts in species distributions. • Currents; distribution patterns and source of stressors; distribution and sources of seed. • Thresholds for stressors (i.e., sediment, pollutants, temps, etc.) above which health/resiliency of holobiont becomes compromised. • Short- and long-term effects of stressors on coral reef ecosystem (as a whole and ecosystem function).	change and ocean acidification from impacts of other environmental threats and to test the effectiveness of management actions.	ecosystems to climate change.
Objective 5.2: Identify areas of high resilience and source of juveniles/recruits of coral species for additional protection.	Climate Change Objective 2.4: Promote conservation of coral reef ecosystems through identification of areas that are potentially resilient to climate change and vulnerable areas where actions are likely to increase resilience. Encourage and promote management actions necessary to avoid or minimize impacts and spread the risk due to climate change and ocean acidification.	No explanation needed.
Objective 5.3: Create and implement a coordinated response and restoration strategy for disturbances (i.e., storms, vessel impacts,	Climate Change Objective 1.3: Develop and implement climate related crisis response plans in all U.S. coral reef jurisdictions to provide a framework	No explanation needed.

etc.) to increase resistance to and recovery of affected coral reef ecosystem.	for early warning, communication, monitoring, research and management response to protect coral reef ecosystems from acute events such as coral bleaching, infectious disease outbreaks, tropical storm impacts and major rainfall events.	
Objective 5.4: Develop and incorporate into management/regulatory strategies coral reef ecosystem water quality standards.	none	none
Objective 5.5: Provide training opportunities to coral reef managers to increase their understanding of the impacts of climate change on coral reef ecosystem; the predicted range and uncertainty of changes that will occur; and management strategies, tools and technologies to assess risk and mitigate adverse impacts of climate change and related stressors (includes training a coordinated response team).	Climate Change Objective 1.1: Provide training opportunities to coral reef managers to increase their understanding of the impacts of climate change, the predicted range and uncertainty of changes that will occur and management strategies that address the impacts of climate change.	No explanation needed.